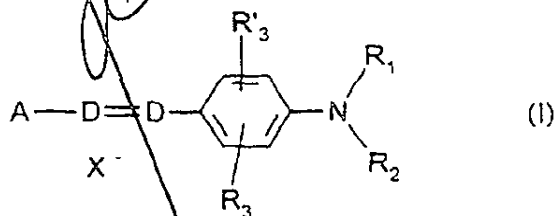


CLAIMS

1. Composition for dyeing keratinous fibres and in particular human keratinous fibres such as hair, containing in an appropriate dyeing medium, (i) at least compound chosen from those of the following formulae (I), (II), (III), (III'), (IV):

a) the compounds of the following formula

(I):



10 in which:

D represents a nitrogen atom or the -CH group,

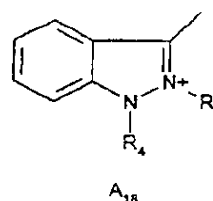
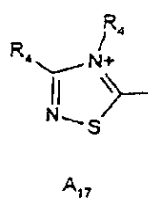
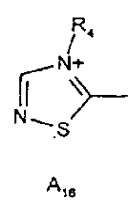
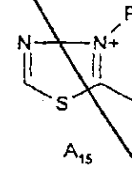
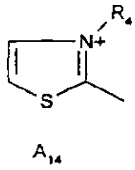
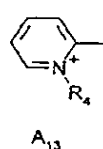
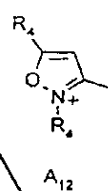
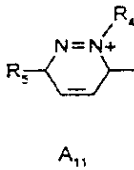
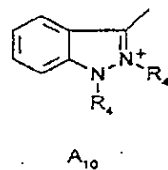
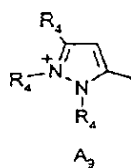
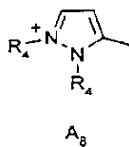
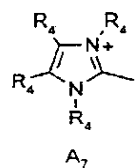
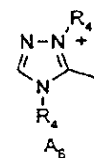
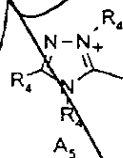
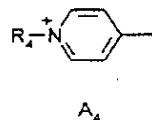
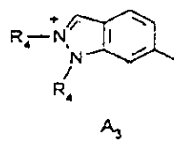
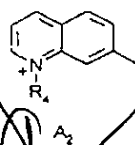
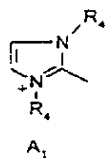
R₁ and R₂, which are identical or different, represent a hydrogen atom; a C₁-C₄ alkyl radical which may be substituted with a -CN, -OH or -NH₂ radical or form with a carbon atom of the benzene ring an optionally oxygen-containing or nitrogen-containing heterocycle which may be substituted with one or more C₁-C₄ alkyl radicals; a 4'-aminophenyl radical,

20 R₃ and R'₃, which are identical or different, represent a hydrogen or halogen atom chosen from chlorine, bromine, iodine and fluorine, a cyano, C₁-C₄ alkyl, C₁-C₄ alkoxy or acetyloxy radical,

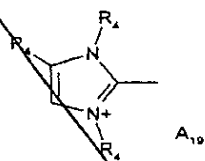
X^- represents an anion which is preferably chosen from chloride, methylsulphate and acetate,

A represents a group chosen from the following structures A_1 to A_{19} :

5



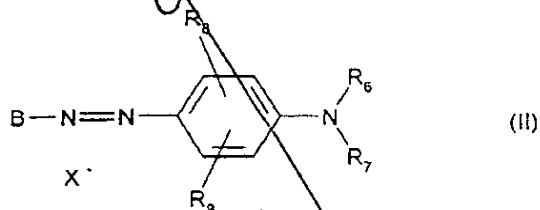
and



in which R_4 represents a C_1 - C_4 alkyl radical which may be substituted with a hydroxyl radical and R_5 represents a C_1 - C_4 alkoxy radical, with the proviso that when D represents $-CH$, A represents A_4 or A_{13} and R_3 is different from an alkoxy radical, then R_1 and R_2 do not simultaneously denote a hydrogen atom;

b) the compounds of the following formula

10 (II):



in which:

R_6 represents a hydrogen atom or a C_1 - C_4 alkyl radical,

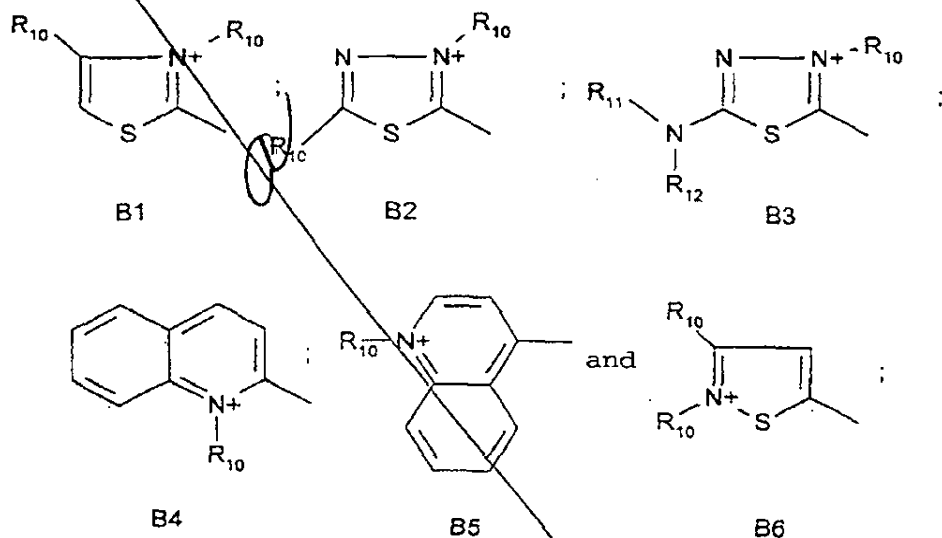
15 R_7 represents a hydrogen atom, an alkyl radical which may be substituted with a $-CN$ radical or with an amino group, a 4'-aminophenyl radical or forms with R_6 an optionally oxygen-containing and/or nitrogen-containing heterocycle which may be substituted with a
20 C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, represent a hydrogen atom, a halogen atom such as

bromine, chlorine, iodine or fluorine, a C_1 - C_4 alkyl or C_1 - C_4 alkoxy radical, a $-CN$ radical,

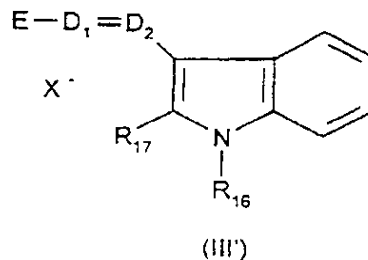
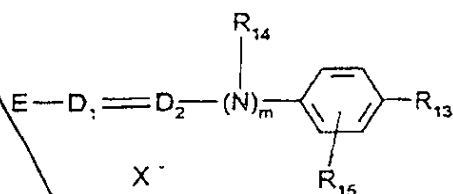
X^- represents an anion which is preferably chosen from chloride, methylsulphate and acetate,

5 B represents a group chosen from the following structures B1 to B6:



in which R_{10} represents a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, represent a
10 hydrogen atom or a C_1 - C_4 alkyl radical;

c) the compounds of the following formulae (III) and (III'):



in which:

R₁₃ represents a hydrogen atom, a C₁-C₄ alkoxy radical, a halogen atom such as bromine, chlorine, iodine or fluorine or an amino radical,

R₁₄ represents a hydrogen atom, a C₁-C₄ alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and/or substituted with one or more C₁-C₄ alkyl groups,

R₁₅ represents a hydrogen or halogen atom such as bromine, chlorine, iodine or fluorine,

R₁₆ and R₁₇, which are identical or different, represent a hydrogen atom or a C₁-C₄ alkyl radical,

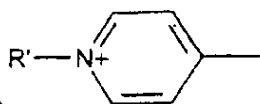
D₁ and D₂, which are identical or different, represent a nitrogen atom or the -CH group,

m = 0 or 1,

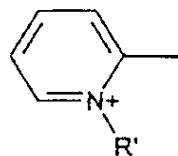
it being understood that when R₁₃ represents an unsubstituted amino group, then D₁ and D₂ simultaneously represent a -CH group and m = 0,

X⁻ represents an anion which is preferably chosen from chloride, methylsulphate and acetate,

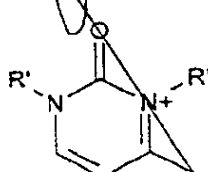
E represents a group chosen from the following structures E1 to E8:



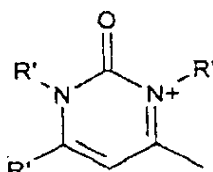
E1



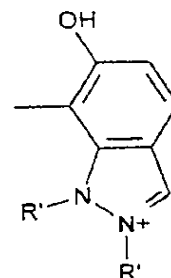
E2



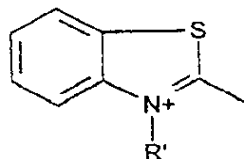
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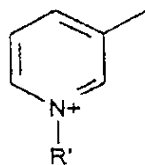
E4



E5

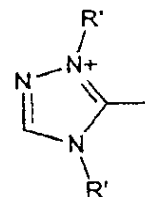


E6



E7

and

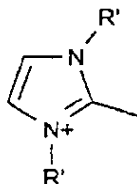


E8

in which R' represents a C₁-C₄ alkyl radical;

- 5 when m = 0 and D₁ represents a nitrogen atom, then E may also denote a group having the following structure E9:

E9



- 10 in which R' represents a C₁-C₄ alkyl radical,

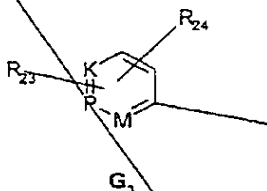
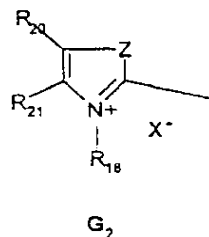
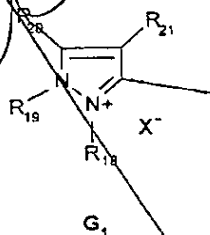
d) the compounds of the following formula

(IV):



in which:

- 5 the symbol G represents a group chosen from the following structures G₁ to G₃:



in which structures G₁ to G₃,

- 10 R₁₈ denotes a C₁-C₄ alkyl radical, a phenyl radical which may be substituted with a C₁-C₄ alkyl radical or a halogen atom chosen from chlorine, bromine, iodine and fluorine;
- R₁₉ denotes a C₁-C₄ alkyl radical or a phenyl radical;
- 15 R₂₀ and R₂₁, which are identical or different, represent a C₁-C₄ alkyl radical, a phenyl radical, or form together in G₁ a benzene ring which is substituted with one or more C₁-C₄ alkyl, C₁-C₄ alkoxy or NO₂ radicals, or form together in G₂ a benzene ring which is optionally

substituted with one or more C_1-C_4 alkyl, C_1-C_4 alkoxy or NO_2 radicals;

R_{20} may denote, in addition, a hydrogen atom;

Z denotes an oxygen or sulphur atom or an $-NR_{19}$ group;

5 M represents a group $-CH$, $-CR$ (R denoting C_1-C_4 alkyl), or $-NR_{22}(X^-)_r$;

K represents a group $-CH$, $-CR$ (R denoting C_1-C_4 alkyl), or $-NR_{22}(X^-)_r$;

P represents a group $-CH$, $-CR$ (R denoting C_1-C_4 alkyl),
10 or $-NR_{22}(X^-)_r$; r denotes zero or 1;

R_{22} represents an O atom, a C_1-C_4 alkoxy radical or a C_1-C_4 alkyl radical;

R_{23} and R_{24} , which are identical or different, represent
a hydrogen or halogen atom chosen from chlorine,
15 bromine, iodine and fluorine, a C_1-C_4 alkyl radical, a C_1-C_4 alkoxy radical or an $-NO_2$ radical;

X^- represents an anion which is preferably chosen from chloride, iodide, methylsulphate, ethylsulphate, acetate and perchlorate;

20 with the proviso that

if R_{22} denotes O, then r denotes zero;

if K or P or M denote $-N-(C_1-C_4 \text{ alkyl})X^-$, then R_{23} or R_{24} is different from a hydrogen atom;

if K denotes $-NR_{22}(X^-)_r$, then $M = P = -CH$, $-CR$;

25 if M denotes $-NR_{22}(X^-)_r$, then $K = P = -CH$, $-CR$;

if P denotes $-NR_{22}(X^-)_r$, then $K = M$ and denote $-CH$ or $-CR$;

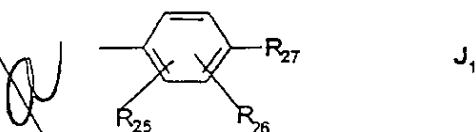
if Z denotes a sulphur atom with R_{21} denoting C_1-C_4 alkyl, then R_{20} is different from a hydrogen atom;

if Z denotes $-NR_{22}$ with R_{19} denoting C_1-C_4 alkyl, then at least one of the R_{18} , R_{20} or R_{21} radicals of G_2 is

5 different from a C_1-C_4 alkyl radical;

the symbol J represents:

-(a) a group having the following structure J_1 :



10 in which structure J_1 ,

R_{25} represents a hydrogen atom, a halogen atom chosen from chlorine, bromine, iodine and fluorine, a C_1-C_4 alkyl radical, a C_1-C_4 alkoxy radical, a radical $-OH$, $-NO_2$, $-NHR_{28}$, $-NR_{29}R_{30}$, $-NHCO(C_1-C_4\text{alkyl})$, or forms with

15 R_{26} a 5- or 6-membered ring containing or otherwise one or more heteroatoms chosen from nitrogen, oxygen or sulphur;

R_{26} represents a hydrogen atom, a halogen atom chosen from chlorine, bromine, iodine and fluorine, a C_1-C_4

20 alkyl or C_1-C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring containing or otherwise one or more heteroatoms chosen from nitrogen, oxygen or sulphur;

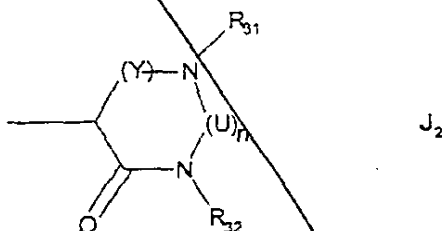
R_{27} represents a hydrogen atom, an $-OH$ radical, an $-NHR_{28}$ radical, an $-NR_{29}R_{30}$ radical;

R_{28} represents a hydrogen atom, a C_1-C_4 alkyl radical, a

C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, a phenyl radical;

R₂₉ and R₃₀, which are identical or different, represent a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical,
5 a C₂-C₄ polyhydroxyalkyl radical;

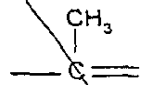
(b) a 5- or 6- membered nitrogen-containing heterocycle group which is capable of containing other heteroatoms and/or carbonyl-containing groups and which may be substituted with one or more C₁-C₄ alkyl, amino
10 or phenyl radicals,
and in particular a group having the following structure J₂:



15 in which structure J₂,

R₃₁ and R₃₂, which are identical or different, represent a hydrogen atom, a C₁-C₄ alkyl radical, a phenyl radical;

Y denotes the -CO- radical or the radical

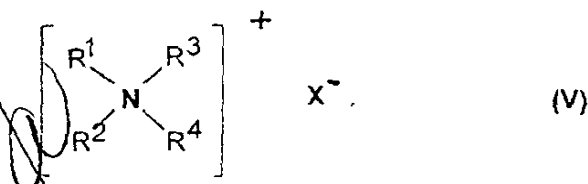


20 n = 0 or 1, with, when n denotes 1, U denotes the -CO- radical.

the said composition being characterized in that it contains, in addition,

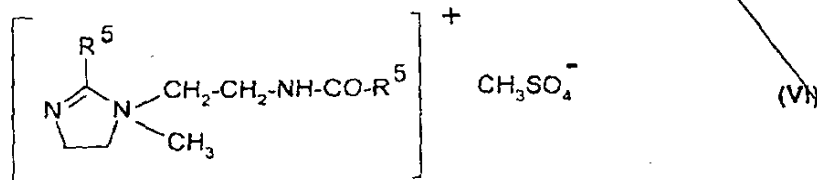
(ii) at least one quaternary ammonium salt chosen from the group comprising:

(ii)₁ - those of the following formula (V):



5 in which,
the radicals R^1 to R^4 , which are identical or different, denote a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising from 1 to ~~about~~ 30 carbon atoms, or an
10 alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl or alkylaryl radical comprising from 12 to about 30 carbon atoms, with at least one radical among R^1 , R^2 , R^3 and R^4 denoting a
15 radical comprising from 8 to 30 carbon atoms;
 X^- is an anion chosen from the group ~~comprising~~ ^{consisting of} halides, phosphates, acetates, lactates and alkyl sulphates;

20 (ii)₂ - the imidazolium salts of the following formula (VI):

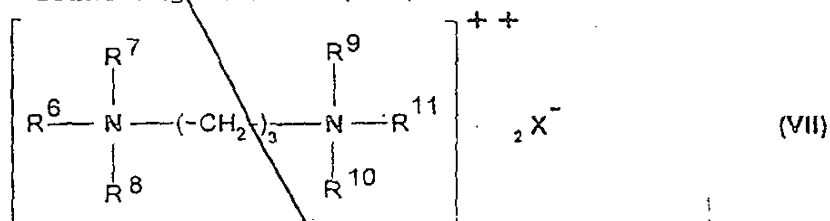


in which,

R^5 is chosen from the alkenyl and/or alkyl radicals comprising from 13 to 31 carbon atoms and derived from tallow fatty acids.

5

(ii)₃ - the quaternary diammonium salts of the following formula (VII):



in which,

10

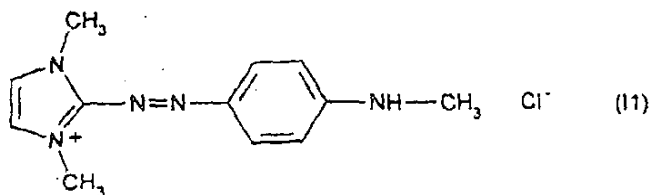
R^6 denotes an aliphatic radical comprising from 16 to 30 carbon atoms, R^7 , R^8 , R^9 , R^{10} and R^{11} are chosen from hydrogen or an alkyl radical comprising from 1 to 4 carbon atoms, and X^- is an anion chosen from the group comprising halides, acetates, phosphates and sulphates.

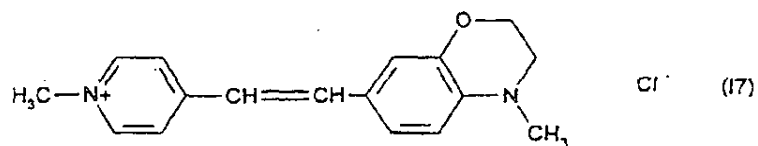
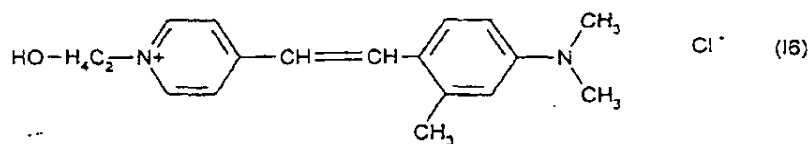
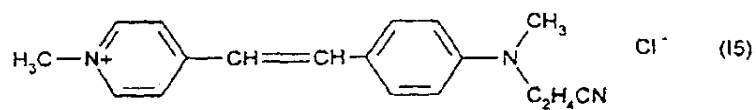
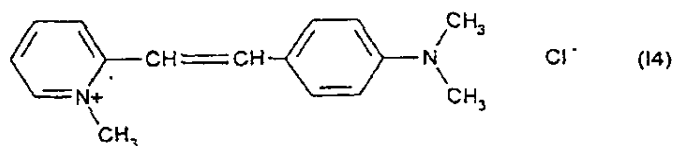
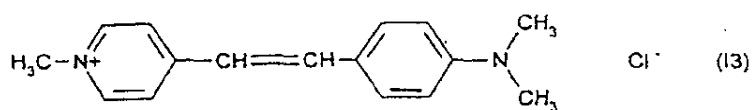
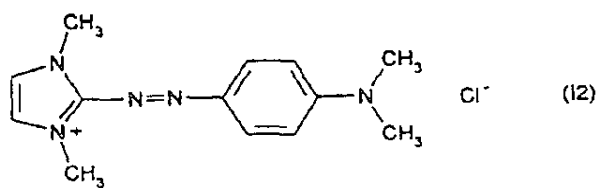
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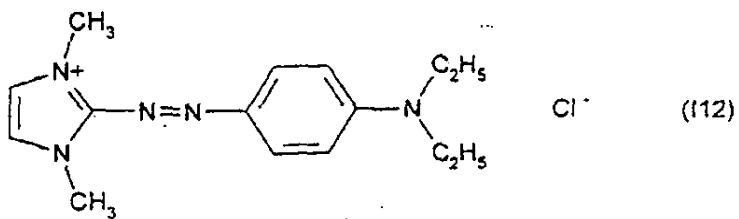
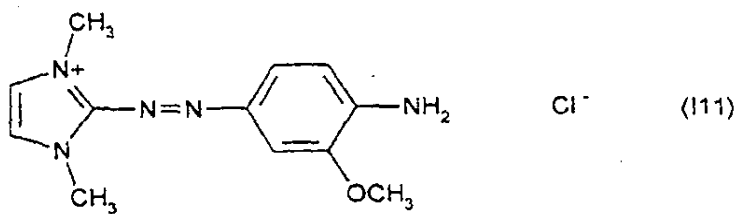
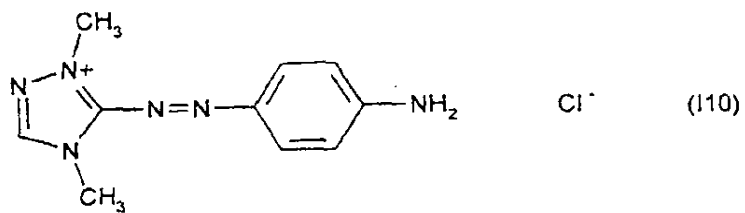
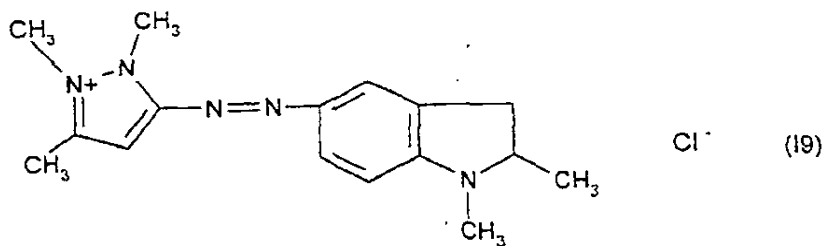
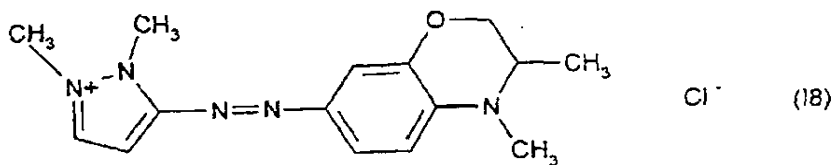
2. ~~Composition according to Claim 1,~~

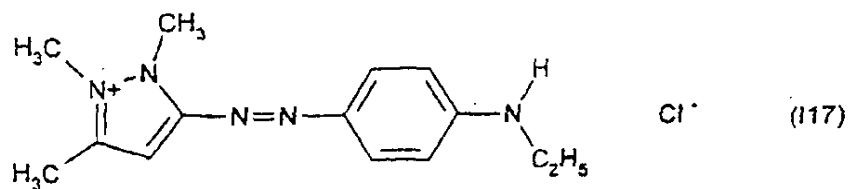
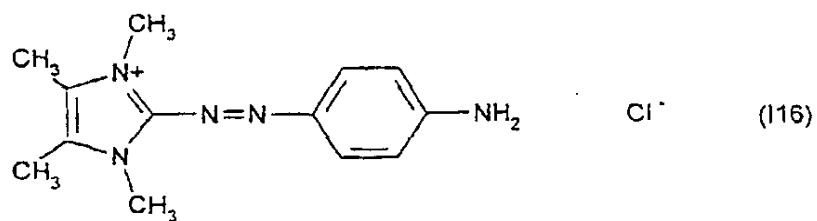
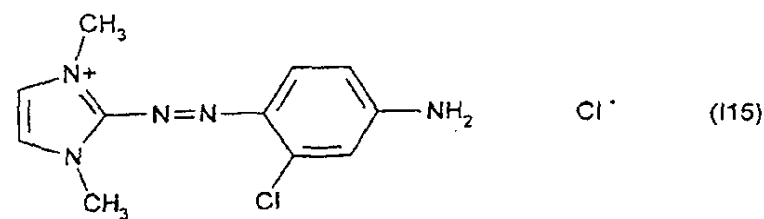
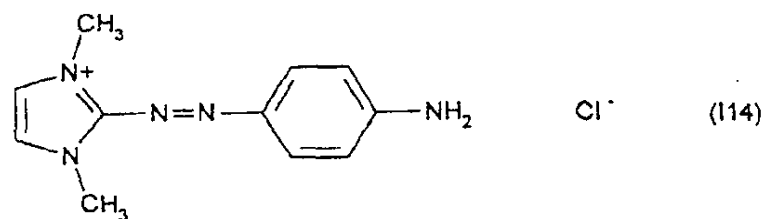
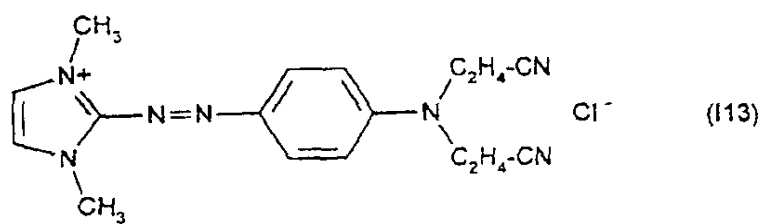
~~characterized in that~~ the cationic direct dyes of formula (I) are chosen from the compounds corresponding to the following structures (I1) to (I54):

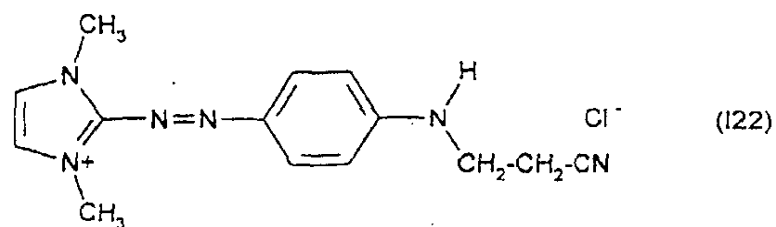
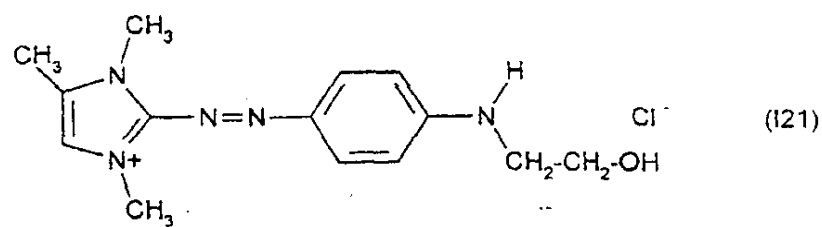
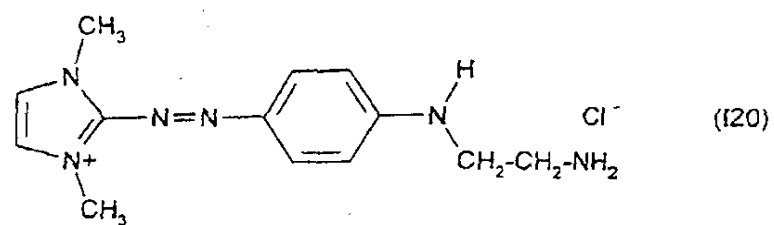
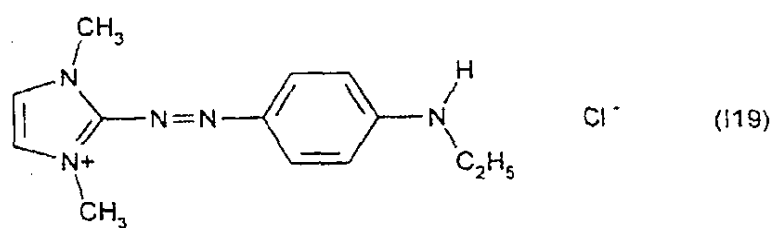
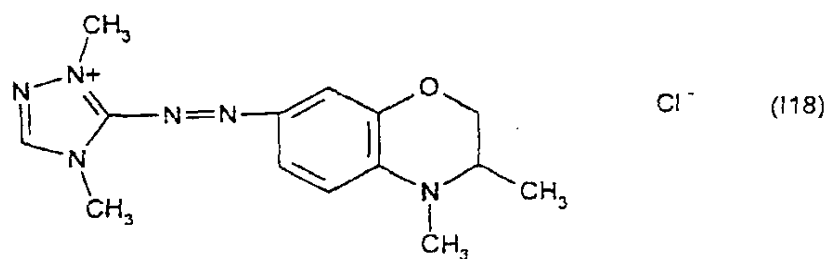
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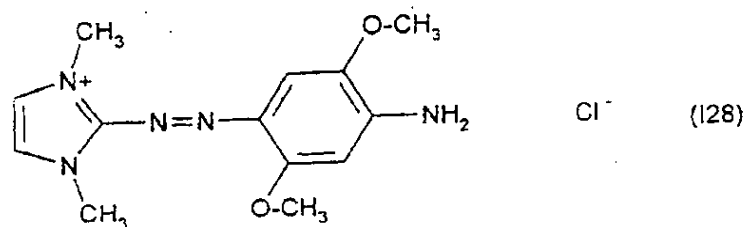
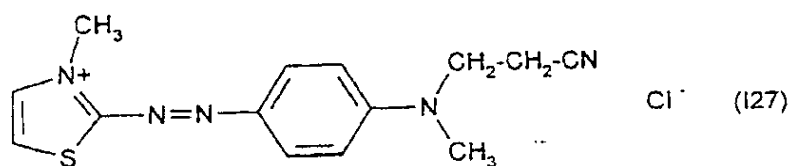
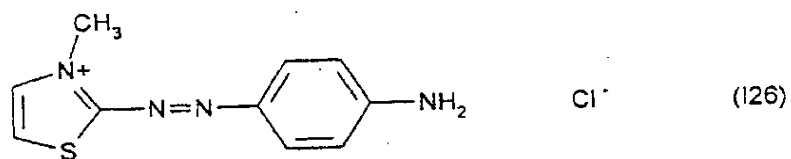
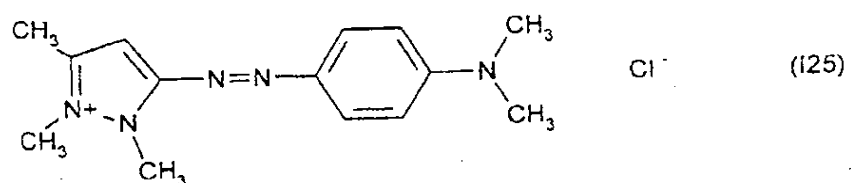
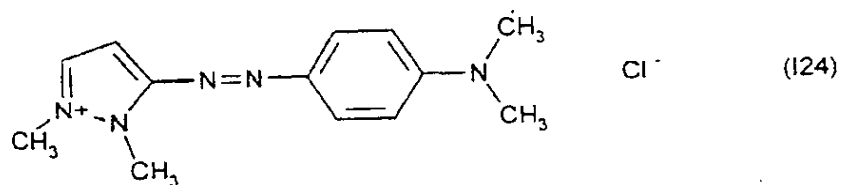
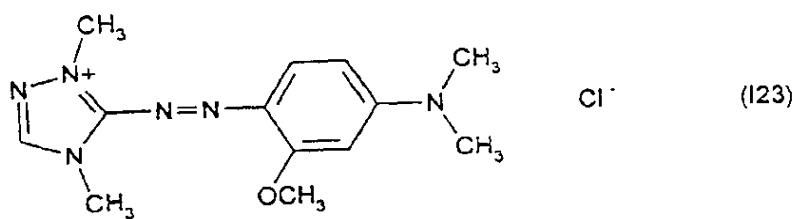


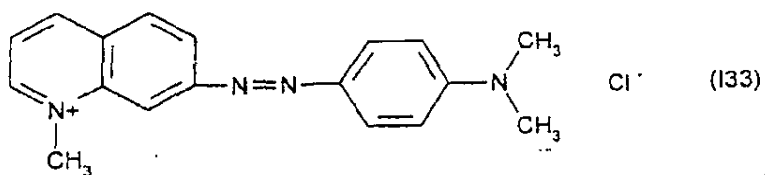
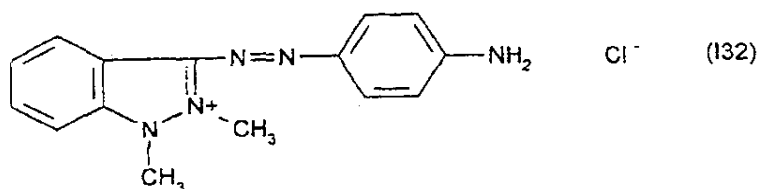
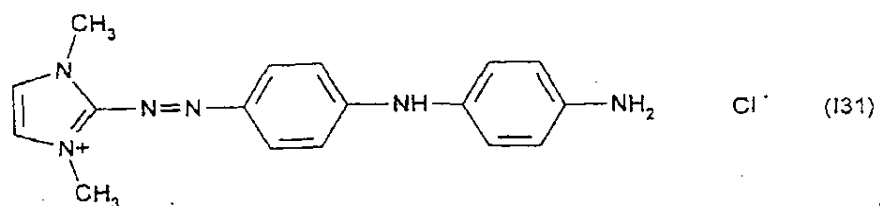
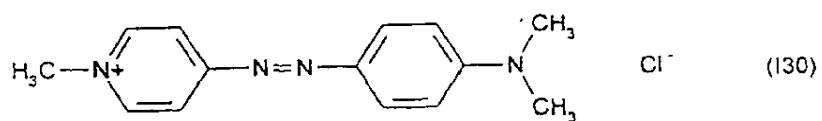
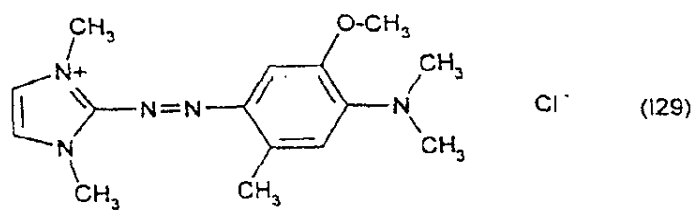


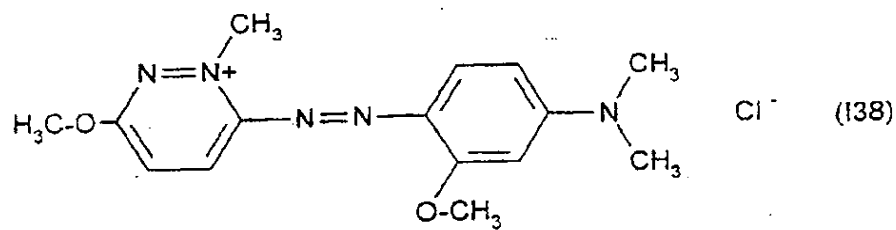
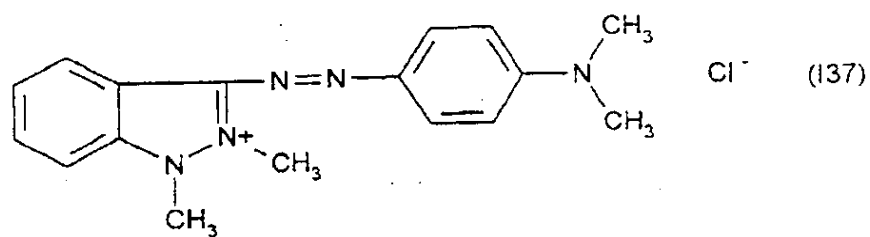
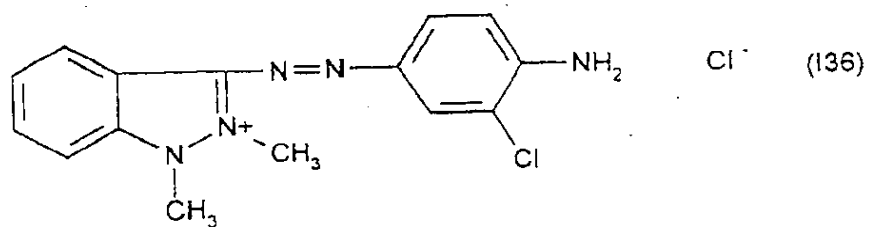
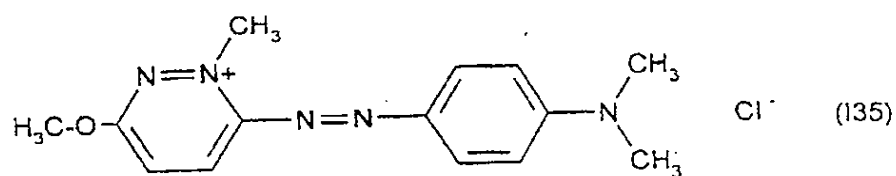
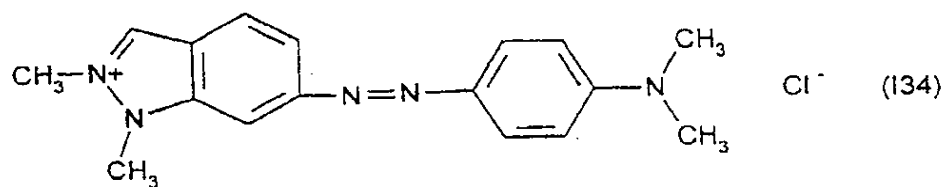


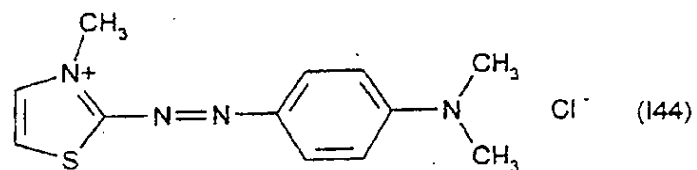
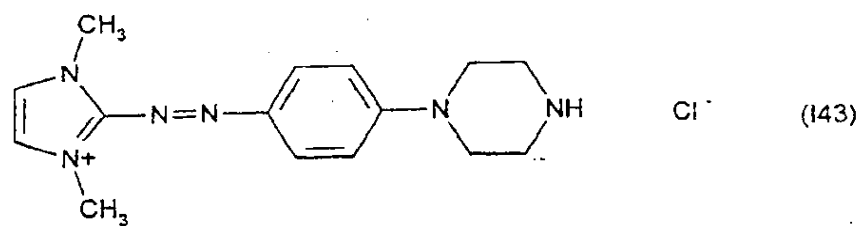
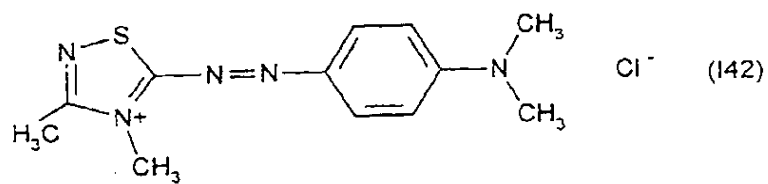
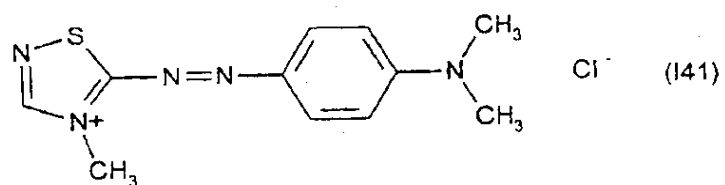
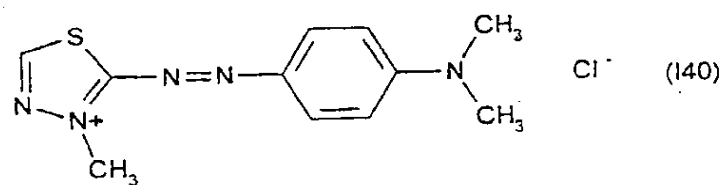
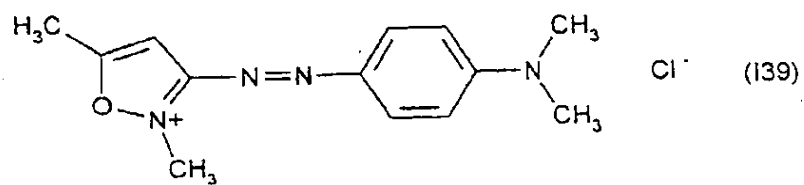


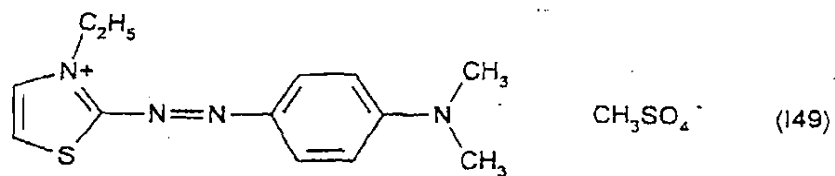
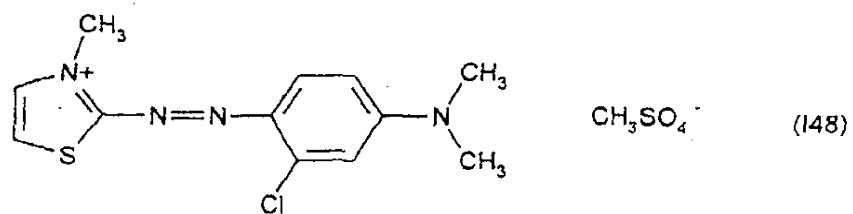
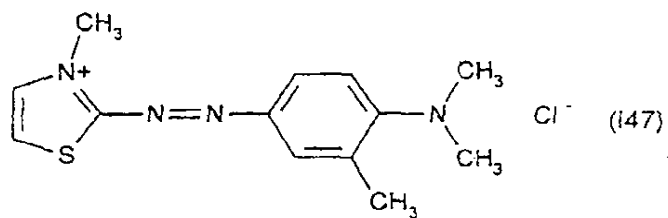
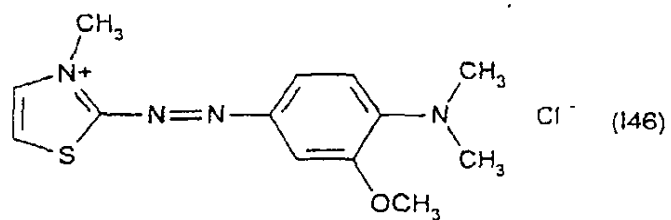
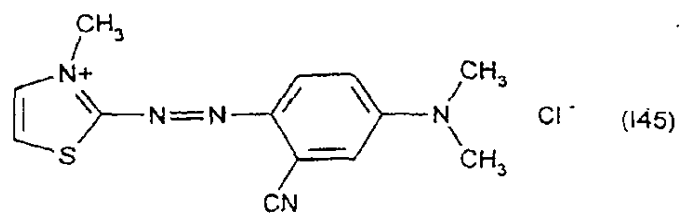


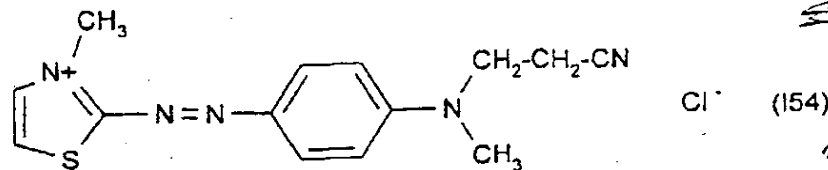
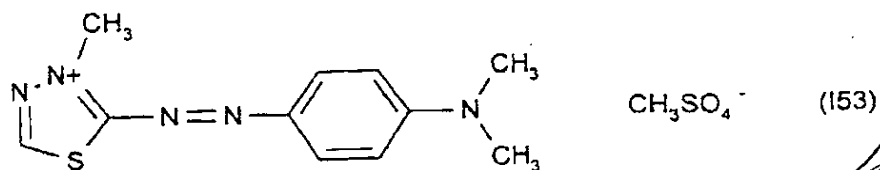
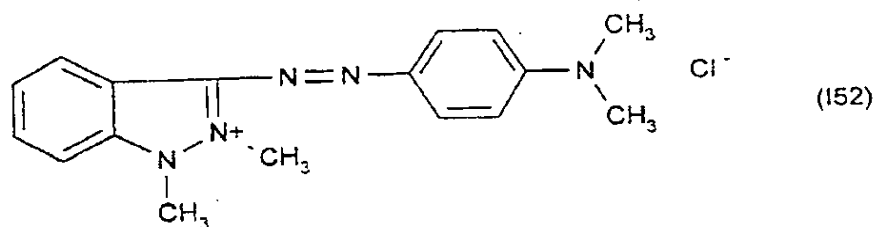
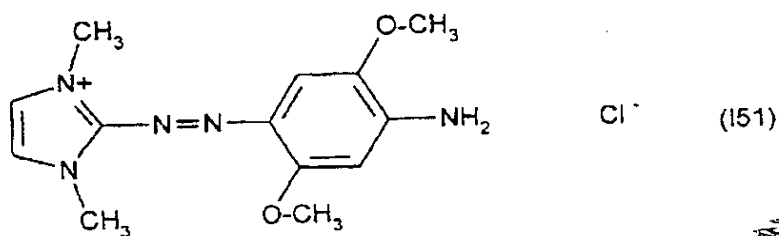
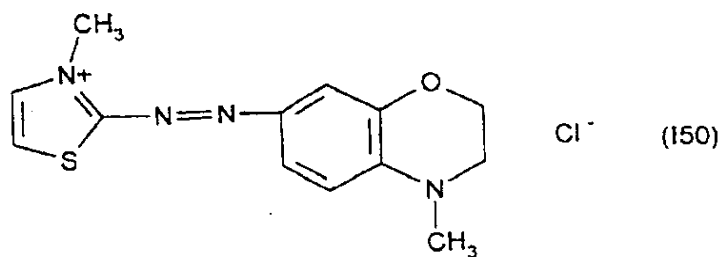












Sub
a3

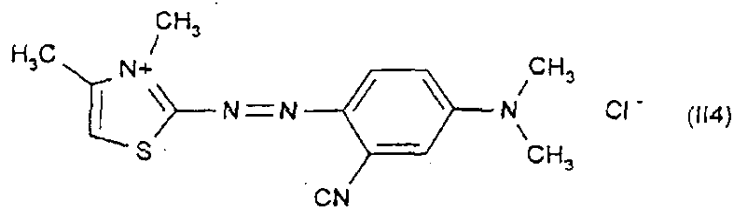
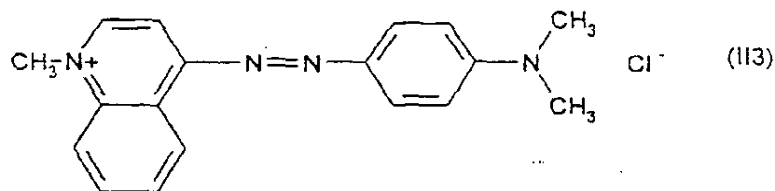
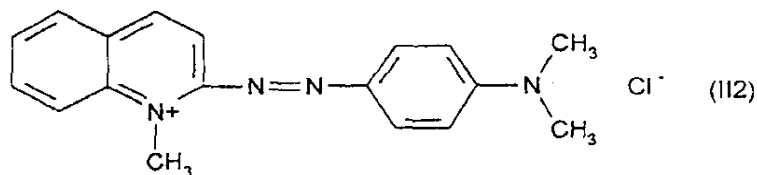
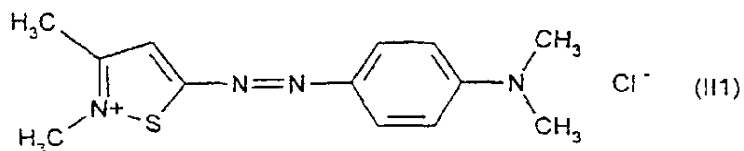
3. Composition according to Claim 2,
characterized in that the cationic direct dyes
correspond to the structures (I1), (I2), (II4), and
(I31).

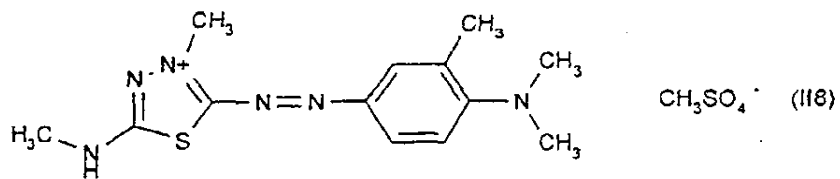
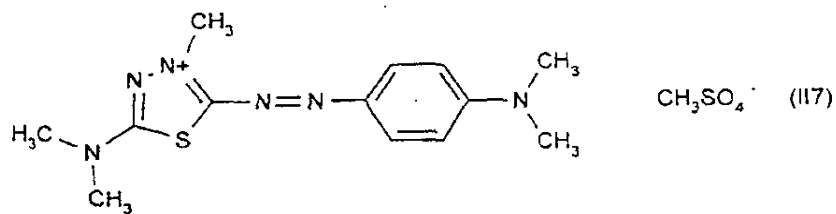
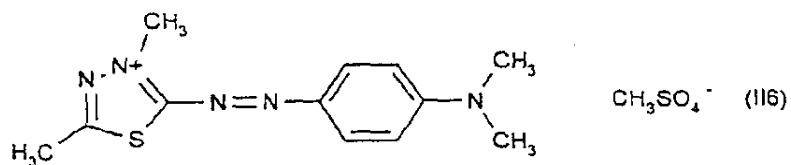
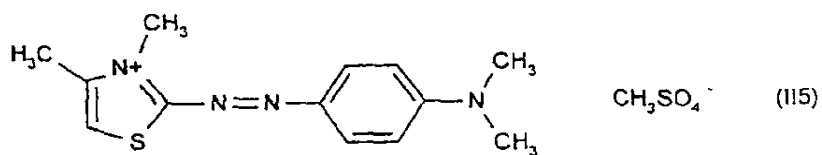
5

4. ~~Composition according to Claim 1,~~

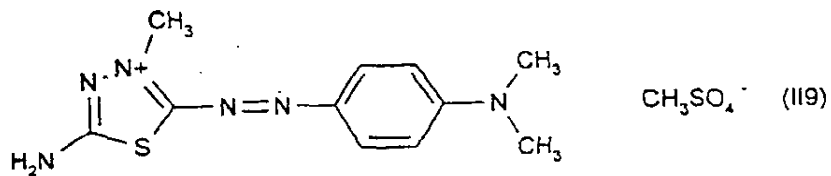
a

~~characterized in that the cationic direct dyes of~~
formula (II) are chosen from the compounds
corresponding to the following structures (II1) to
(II9):





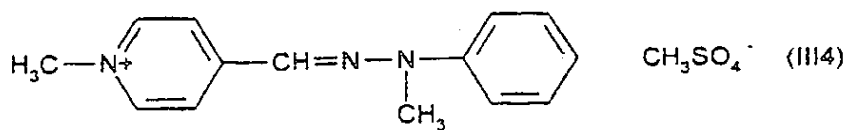
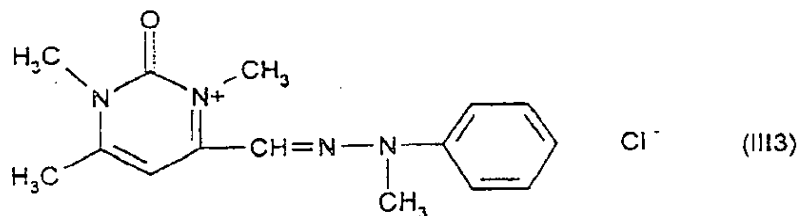
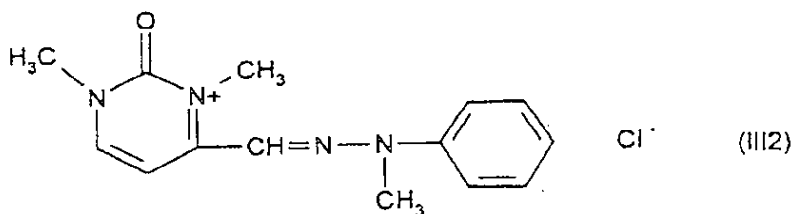
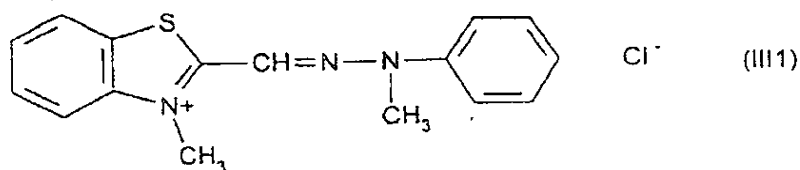
; and

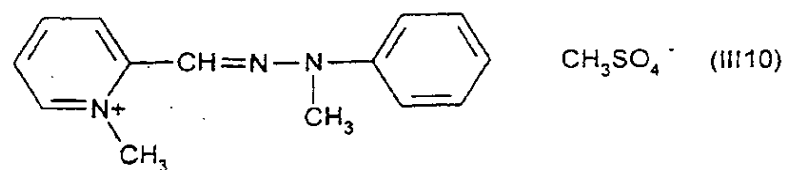
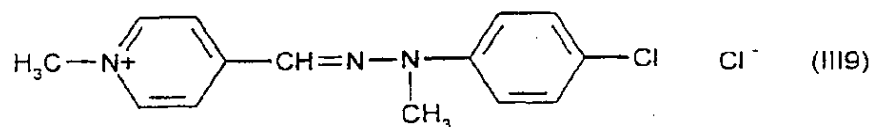
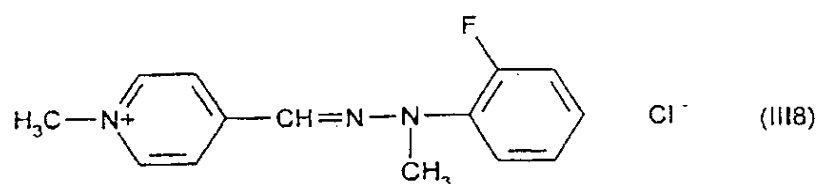
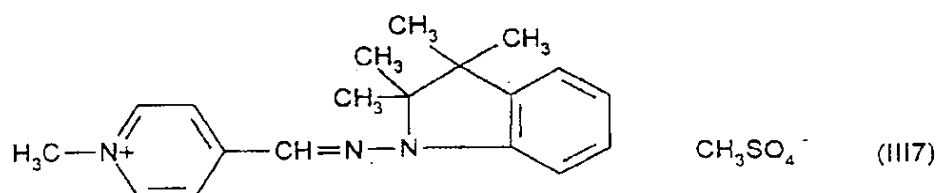
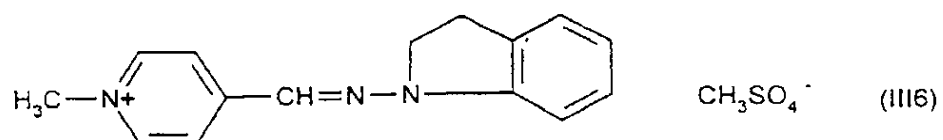
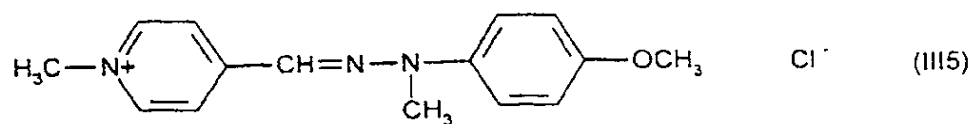


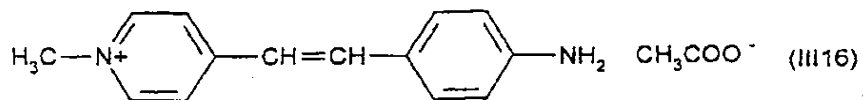
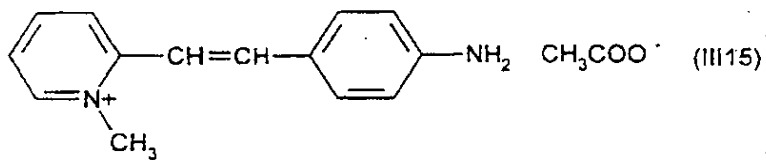
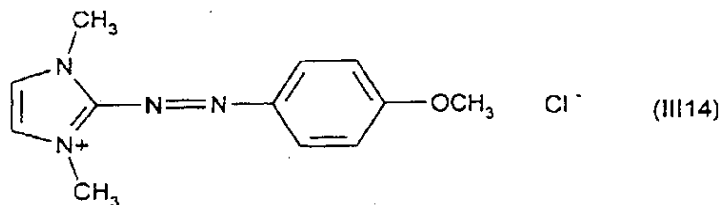
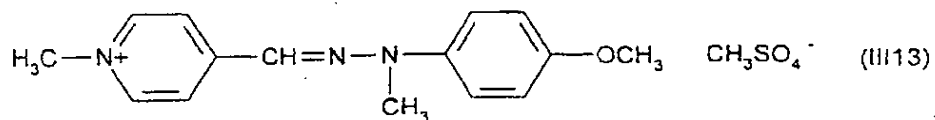
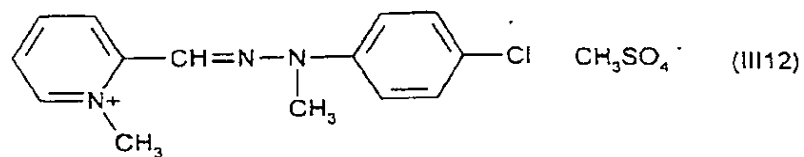
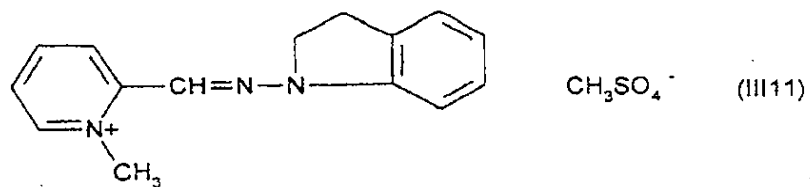
5. ~~Composition according to Claim 1,~~
 5 ~~characterized in that the cationic direct dyes of~~

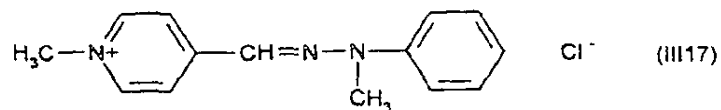
Q5

formula (III) are chosen from the compounds corresponding to the following structures (III1) to (III18):

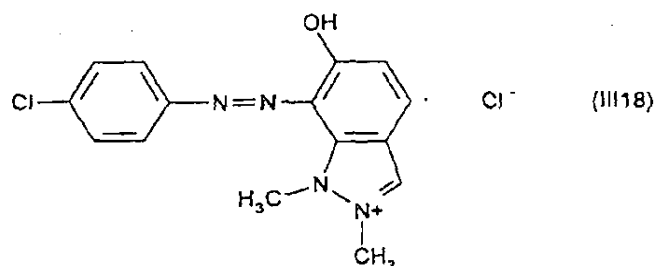








; and

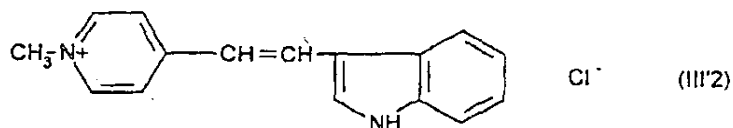
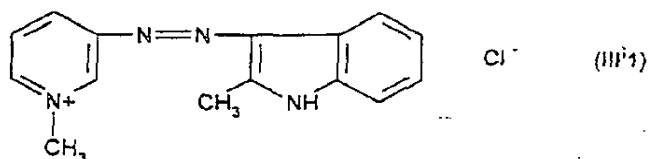


6. Composition according to Claim 5,
characterized in that the cationic direct dyes of
formula (III) are chosen from the compounds
corresponding to the structures (III4), (III5) and
(III13).

7. ~~Composition according to Claim 1,~~

~~characterized in that~~ the cationic direct dyes of
formula (III') are chosen from the compounds

corresponding to the following structures (III'1) to
(III'3):



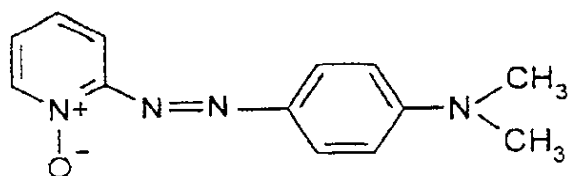
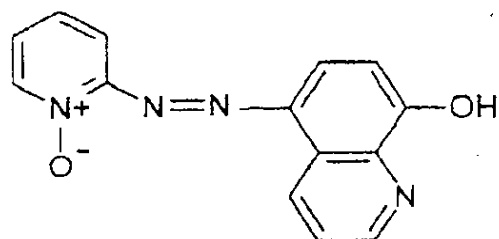
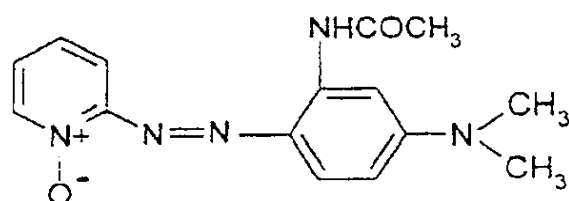
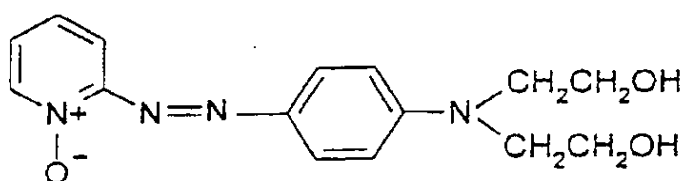
; and

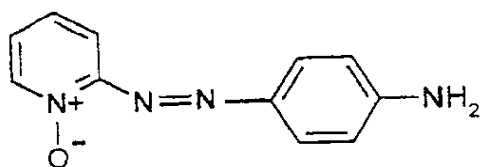
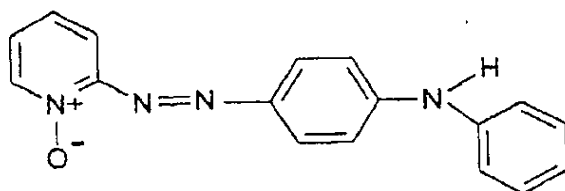
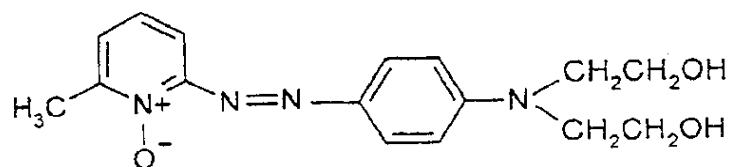
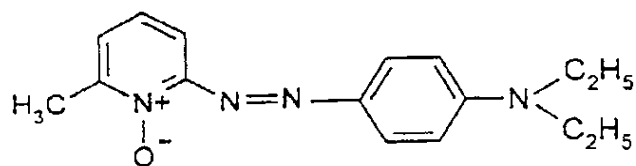
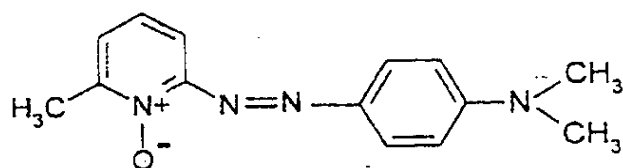
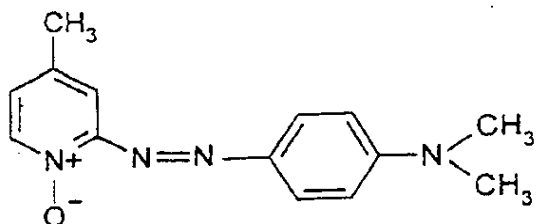
8. ~~Composition according to Claim 1,~~

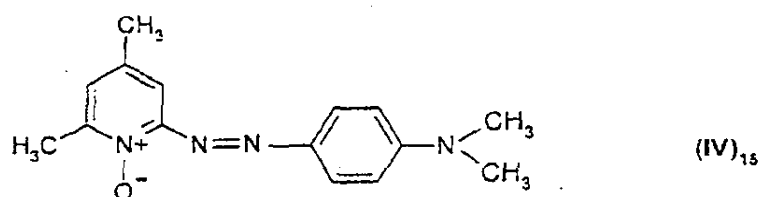
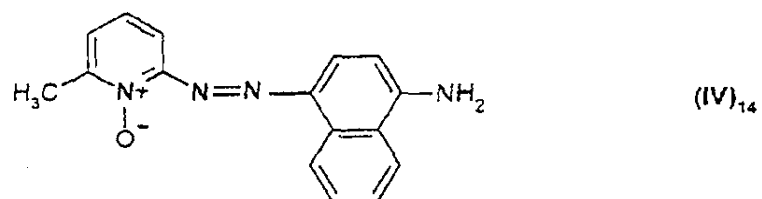
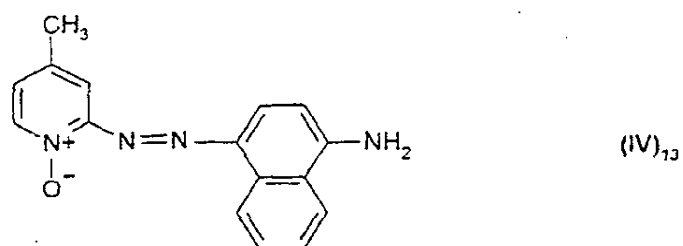
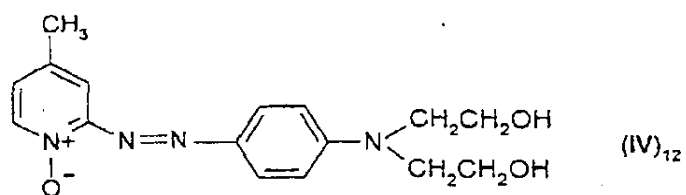
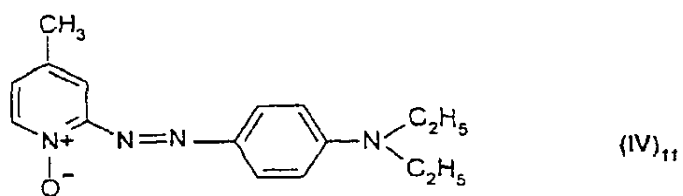
~~characterized in that the cationic direct dyes of~~
formula (IV) are chosen from the compounds

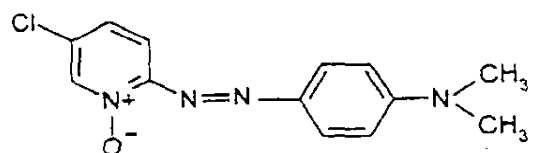
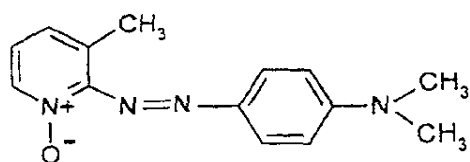
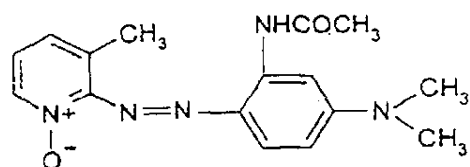
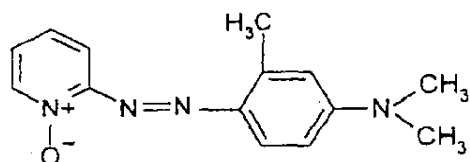
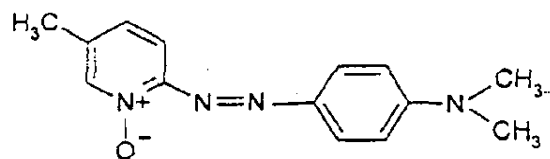
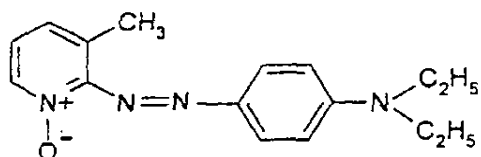
5 corresponding to the following structures (IV)₁ to
(IV)₇₇:

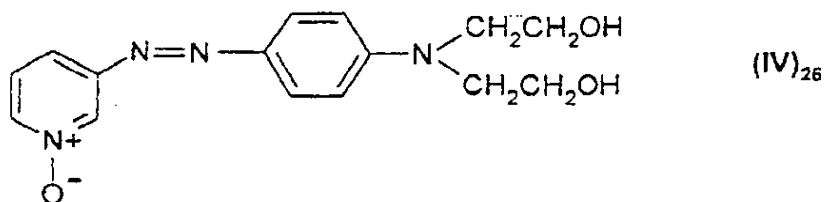
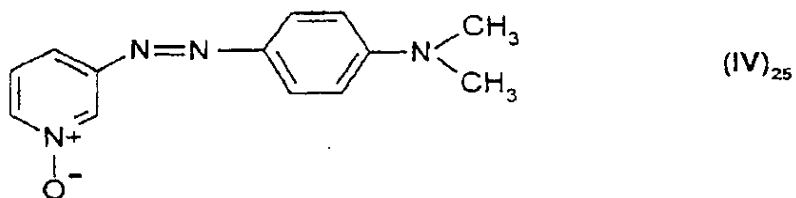
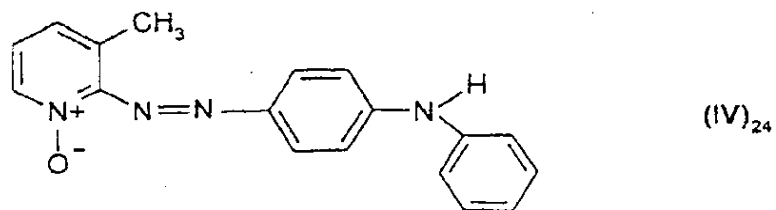
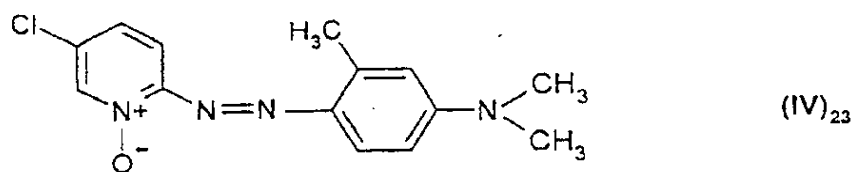
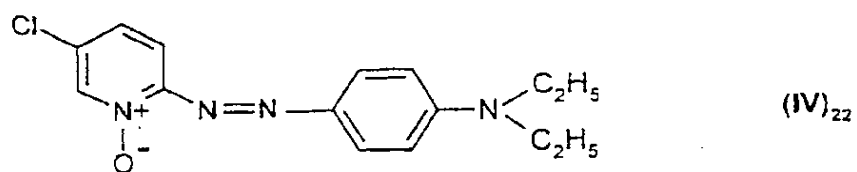
[illegible]

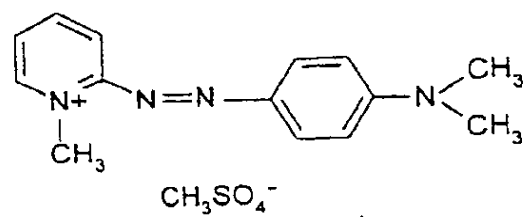
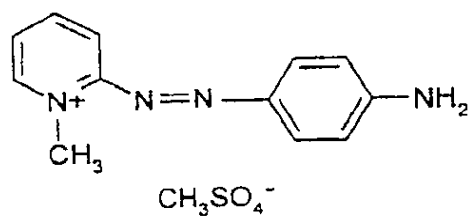
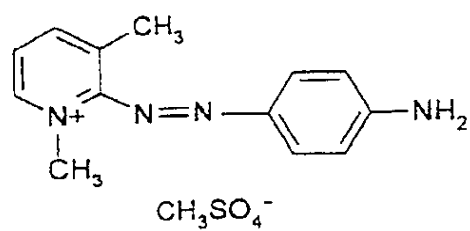
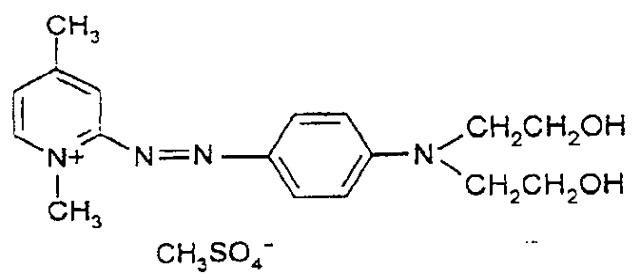
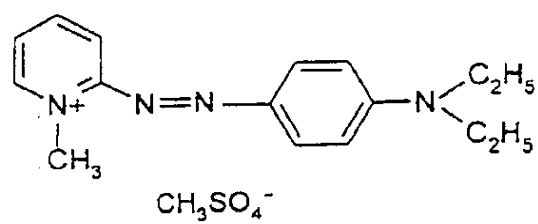
(IV)₁(IV)₂(IV)₃(IV)₄

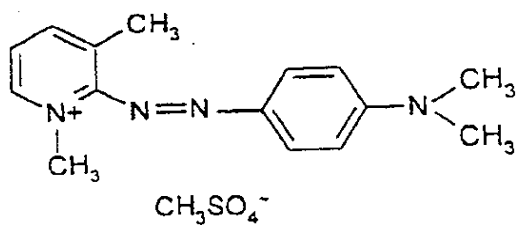
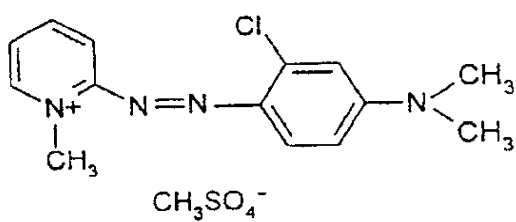
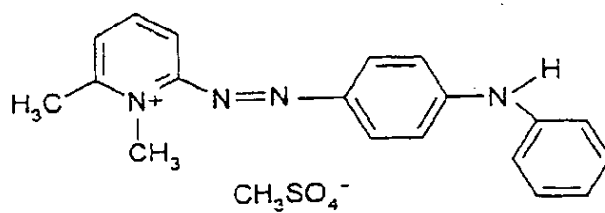
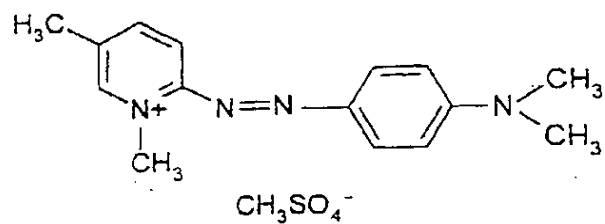
(IV)₅(IV)₆(IV)₇(IV)₈(IV)₉(IV)₁₀

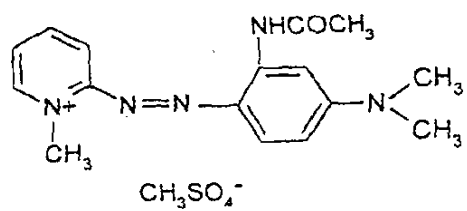
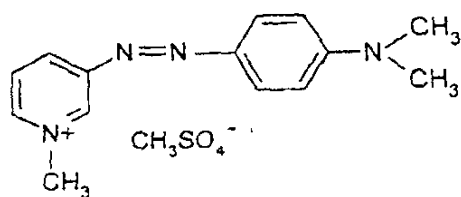
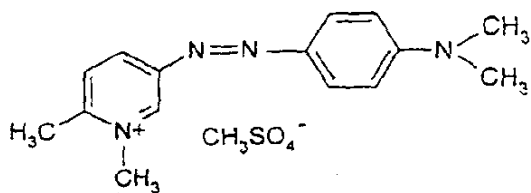
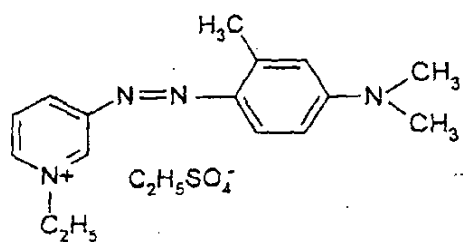


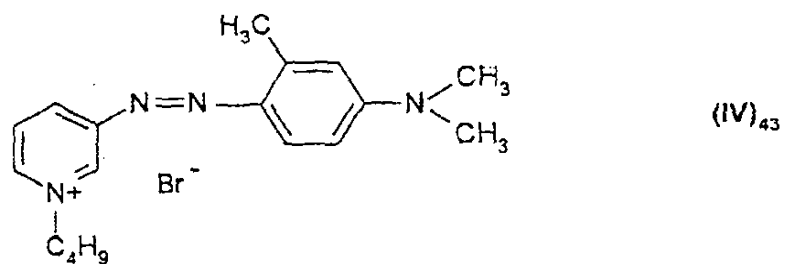
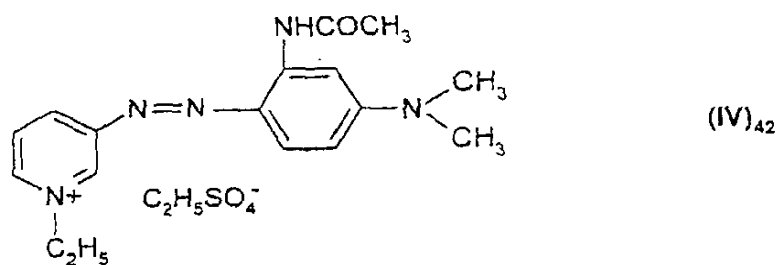
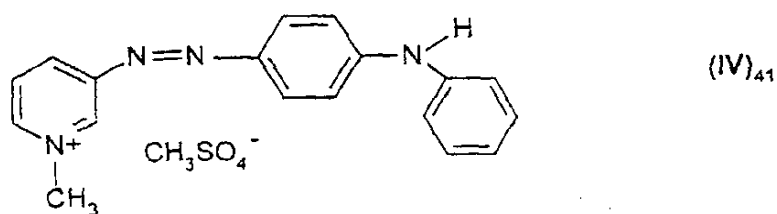
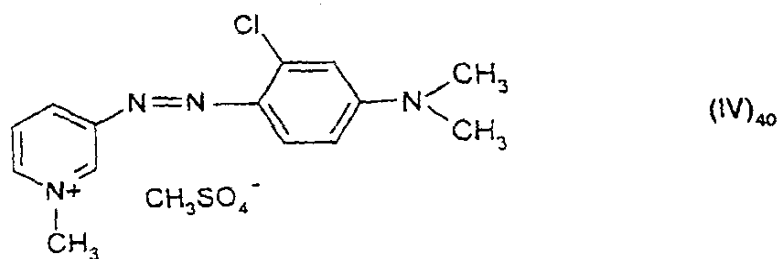
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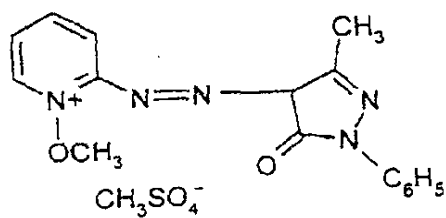
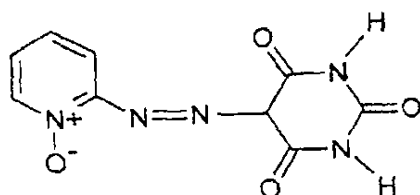
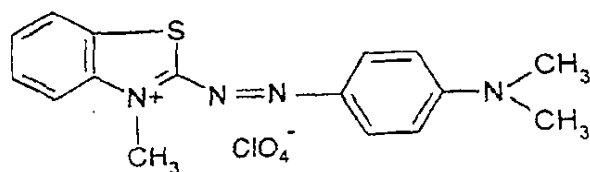
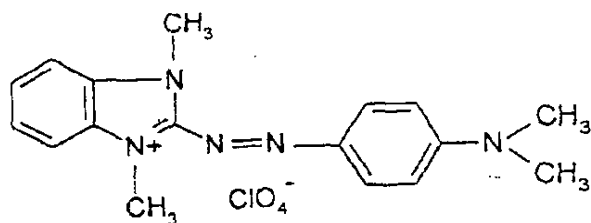
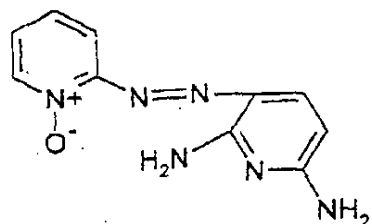


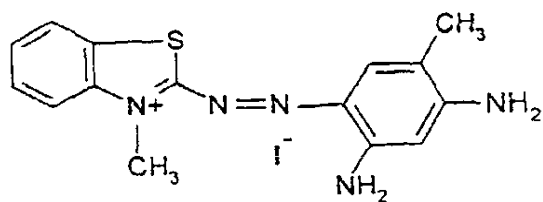
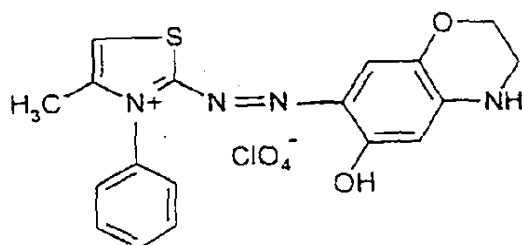
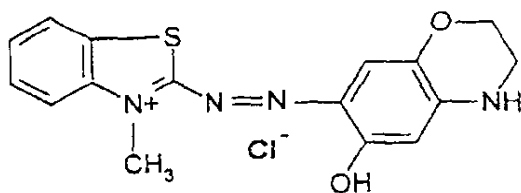
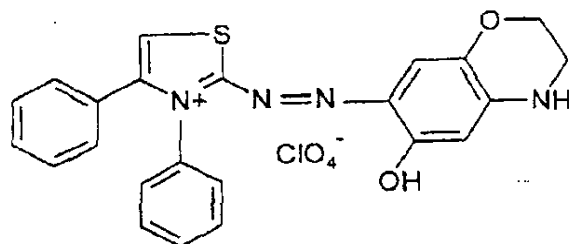
(IV)₂₇(IV)₂₈(IV)₂₉(IV)₃₀(IV)₃₁

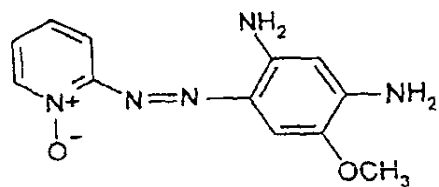
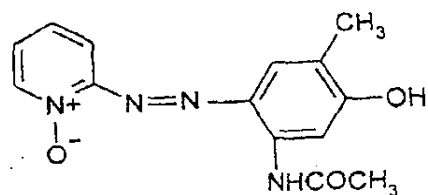
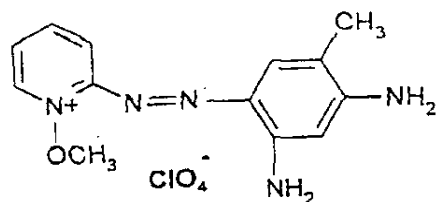
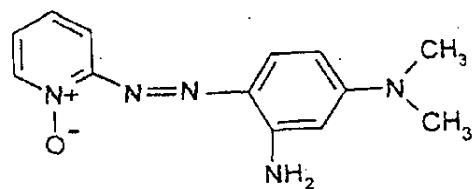
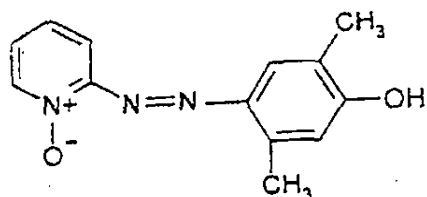
(IV)₃₂(IV)₃₃(IV)₃₄(IV)₃₅

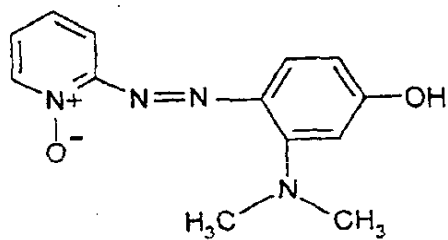
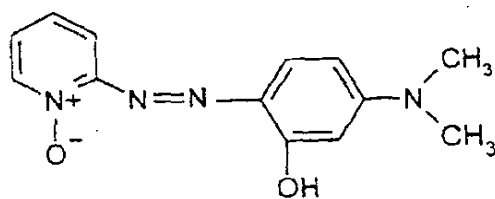
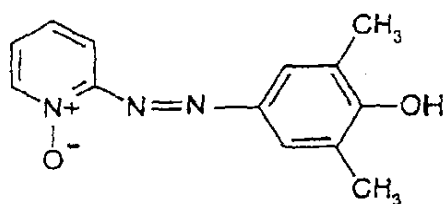
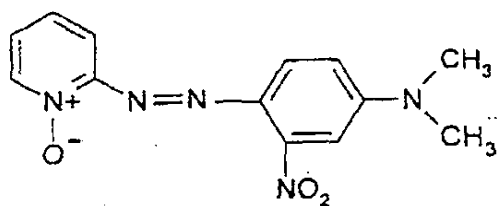
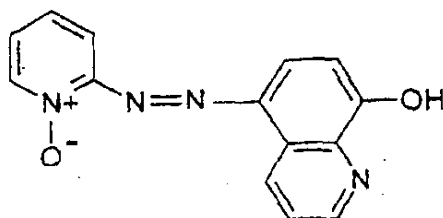
(IV)₃₆(IV)₃₇(IV)₃₈(IV)₃₉

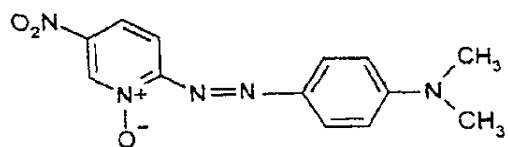
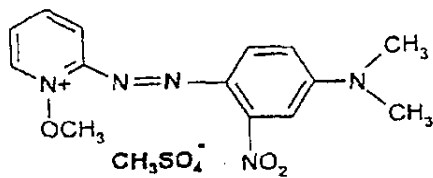
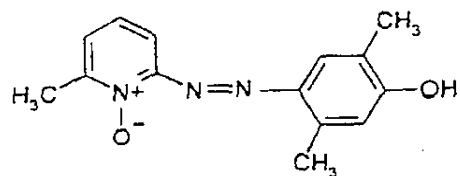
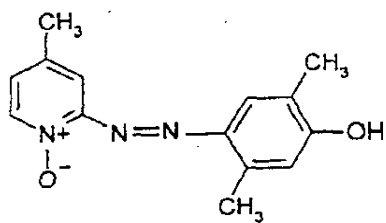
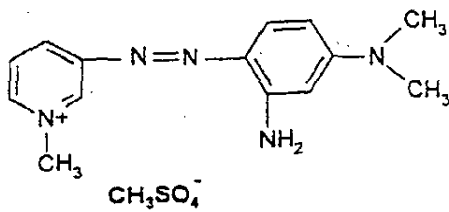


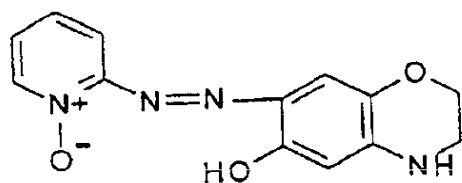
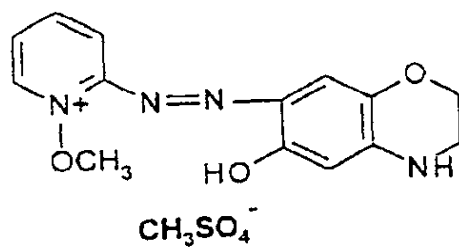
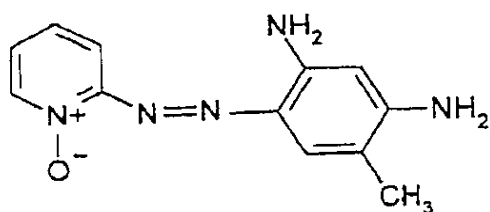
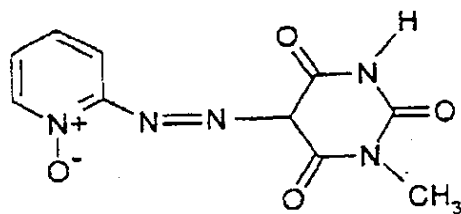
(IV)₄₄(IV)₄₅(IV)₄₆(IV)₄₇(IV)₄₈

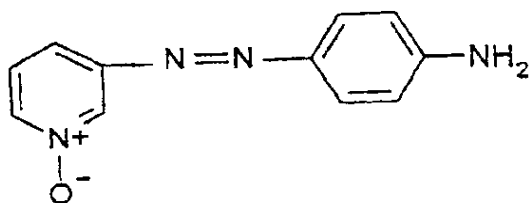
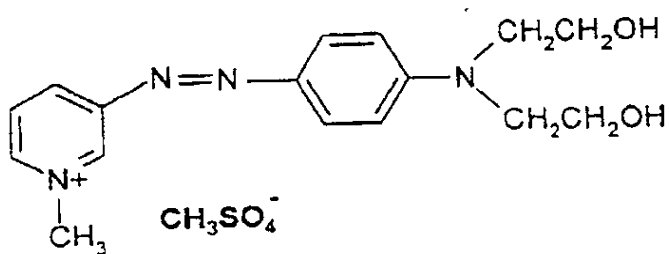
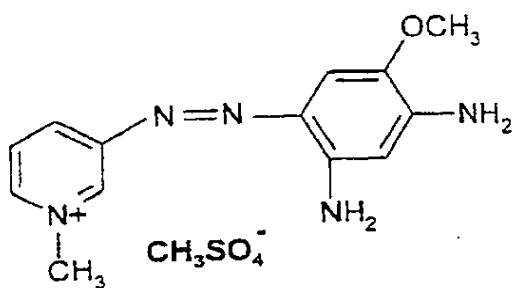
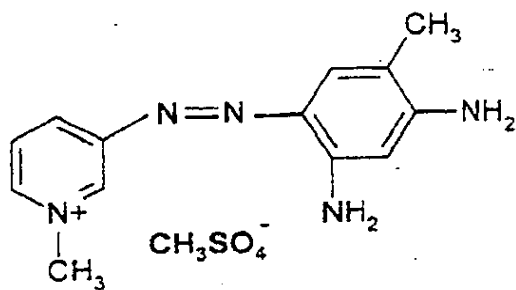
(IV)₄₉(IV)₅₀(IV)₅₁(IV)₅₂

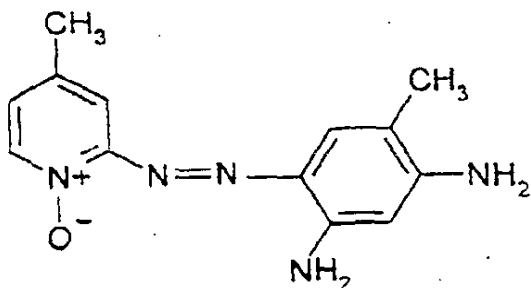
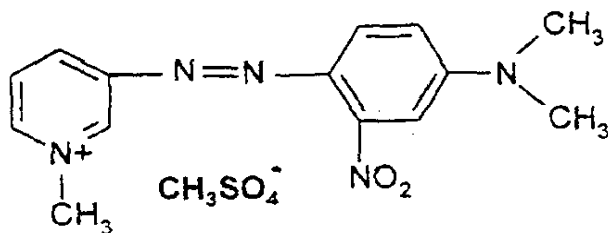
(IV)₅₃(IV)₅₄(IV)₅₅(IV)₅₆(IV)₅₇

(IV)₅₈(IV)₅₉(IV)₆₀(IV)₆₁(IV)₆₂

(IV)₆₃(IV)₆₄(IV)₆₅(IV)₆₆(IV)₆₇

(IV)₆₈(IV)₆₉(IV)₇₀(IV)₇₁

(IV)₇₂(IV)₇₃(IV)₇₄(IV)₇₅

(IV)₇₆(IV)₇₇

9. Composition according to any one of the preceding claims, characterized in that the cationic direct dye(s) of formulae (I), (II), (III), (III') or (IV) represent from 0.001 to 10% by weight of the total weight of the composition.

10. Composition according to Claim 9, characterized in that the cationic direct dye(s) of formulae (I), (II), (III), (III') or (IV) represent from 0.005 to 5% by weight of the total weight of the composition.

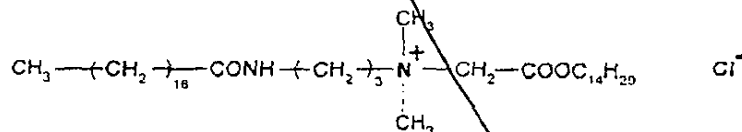
11. Composition according to any one of the preceding claims, characterized in that the quaternary ammonium salt (ii) of formula (V) is a dialkyldimethylammonium or alkyltrimethylammonium salt in which the alkyl radical comprises from 12 to 22 carbon atoms.

12. Composition according to Claim 11, characterized in that it is distearyldimethylammonium chloride, cetyltrimethylammonium chloride or behenyltrimethylammonium chloride.

5 13. Composition according to any one of the preceding claims, characterized in that the quaternary ammonium salt (ii) of formula (V) is a di(C₁-C₂ alkyl) (C₁₂-C₂₂ alkyl)hydroxy(C₁-C₂ alkyl)ammonium salt.

10 14. Composition according to Claim 13, characterized in that it is oleocetylhydroxyethylammonium chloride.

15 15. Composition according to any one of the preceding claims, characterized in that the quaternary ammonium salt (ii) of formula (V) is stearamidopropyldimethyl (myristyl acetate) ammonium chloride of formula:



16. Composition according to any one of the preceding claims, characterized in that the quaternary ammonium salt(s) (ii) represent from 0.01 to 10% by weight of the total weight of the dyeing composition.

17. Composition according to Claim 16, characterized in that the quaternary ammonium salt(s) represent from 0.05 to 5% by weight of the total weight of the dyeing composition.

18. Composition according to any one of the preceding claims, characterized in that the appropriate dyeing medium (or carrier) consists of water or of a mixture of water and of at least one organic solvent.

5 19. Composition according to any one of the preceding claims, characterized in that it has a pH of between 2 and 11 and preferably between 5 and 10.

20. Composition according to any one of the preceding claims, characterized in that it is intended
10 for oxidation dyeing and in that it contains one or more oxidation bases chosen from the para-phenylenediamines, the bis-phenylalkylenediamines, the para-aminophenols, the ortho-aminophenols and the heterocyclic bases.

15 21. Composition according to Claim 20, characterized in that the oxidation base(s) represent 0.0005 to 12% by weight of the total weight of the dyeing composition.

20 22. Composition according to Claim 21, characterized in that the oxidation base(s) represent 0.005 to 6% by weight of the total weight of the dyeing composition.

25 23. Composition according to any one of Claims 20 to 22, characterized in that it contains one or more couplers chosen from the meta-phenylenediamines, the meta-aminophenols, the meta-diphenols and the heterocyclic couplers.

24. Composition according to Claim 23, characterized in that the coupler(s) represent from 0.0001 to 10% by weight of the total weight of the dyeing composition.

5 25. Composition according to Claim 24, characterized in that the coupler(s) represent from 0.005 to 5% by weight of the total weight of the dyeing composition.

10 26. Composition according to any one of the preceding claims, characterized in that it is intended for direct lightening dyeing or oxidation dyeing and in that it then contains at least one oxidizing agent.

15 27. Method of dyeing keratinous fibres and in particular human keratinous fibres such as hair, characterized in that at least one dyeing composition as defined in any one of Claims 1 to 26 is applied to the fibres for a sufficient time to develop the desired colour, after which they are rinsed, optionally washed with shampoo, rinsed again and dried.

20 28. Method of dyeing keratinous fibres and in particular human keratinous fibres such as hair, characterized in that at least one dyeing composition as defined in any one of Claims 1 to 26 is applied to the fibres for a sufficient time to develop the desired
25 colour, with no final rinsing.

 29. Method of dyeing keratinous fibres and in particular human keratinous fibres such as hair, characterized in that it comprises a preliminary stage

consisting of storing in a separate form, on the one hand, a composition (A1) comprising, in an appropriate dyeing medium, at least one cationic direct dye (i) as defined in the preceding claims and at least one
5 oxidation base and, on the other hand, a composition (B1) containing, in an appropriate dyeing medium, at least one oxidizing agent, and then mixing them at the time of use before applying this mixture to the keratinous fibres, the composition (A1) or the
10 composition (B1) containing the quaternary ammonium salt (ii) as defined in the preceding claims.

30. Method of dyeing keratinous fibres and in particular human keratinous fibres such as hair, characterized in that it comprises a preliminary stage
15 consisting of storing in a separate form, on the one hand, a composition (A2) comprising, in an appropriate dyeing medium, at least one cationic direct dye (i) as defined in the preceding claims and, on the other hand, a composition (B2) containing, in an appropriate dyeing
20 medium, at least one oxidizing agent, and then mixing them at the time of use before applying this mixture to the keratinous fibres, the composition (A2) or the composition (B2) containing the quaternary ammonium salt (ii) as defined in the preceding claims.

25 31. Multicompartment device or multicompartment dyeing "kit", characterized in that a first compartment contains composition (A1) or (A2) as defined in Claim 29 or 30 and a second compartment

contains composition (B1) or (B2) as defined in Claim

29 ~~Ans~~ 30.

add
ag

4000-3000	$\nu(\text{OH})$	Hydroxyl	1000-600	$\nu(\text{C-H})$	Alkyl
3000-2800	$\nu(\text{C-H})$	Alkyl	1600-1450	$\nu(\text{C=O})$	Carbonyl
1600-1450	$\nu(\text{C=O})$	Carbonyl	1500-1300	$\nu(\text{C=C})$	Alkene
1500-1300	$\nu(\text{C=C})$	Alkene	1300-1000	$\nu(\text{C-O})$	Ether
1300-1000	$\nu(\text{C-O})$	Ether	1000-600	$\nu(\text{C-H})$	Alkyl
1000-600	$\nu(\text{C-H})$	Alkyl	600-400	$\nu(\text{C-Cl})$	Chloride
600-400	$\nu(\text{C-Cl})$	Chloride	400-200	$\nu(\text{C-F})$	Fluoride
400-200	$\nu(\text{C-F})$	Fluoride	200-100	$\nu(\text{C-Br})$	Bromide
200-100	$\nu(\text{C-Br})$	Bromide	100-50	$\nu(\text{C-I})$	Iodide
100-50	$\nu(\text{C-I})$	Iodide	50-20	$\nu(\text{C-S})$	Sulfide
50-20	$\nu(\text{C-S})$	Sulfide	20-10	$\nu(\text{C-N})$	Nitride
20-10	$\nu(\text{C-N})$	Nitride	10-5	$\nu(\text{C-P})$	Phosphide
10-5	$\nu(\text{C-P})$	Phosphide	5-2	$\nu(\text{C-B})$	Boride
5-2	$\nu(\text{C-B})$	Boride	2-1	$\nu(\text{C-Mg})$	Magnesium
2-1	$\nu(\text{C-Mg})$	Magnesium	1-0	$\nu(\text{C-Al})$	Aluminum
1-0	$\nu(\text{C-Al})$	Aluminum	0-0	$\nu(\text{C-Si})$	Silicon
0-0	$\nu(\text{C-Si})$	Silicon	-0-0	$\nu(\text{C-Pb})$	Lead
-0-0	$\nu(\text{C-Pb})$	Lead	-0-0	$\nu(\text{C-Bi})$	Bismuth
-0-0	$\nu(\text{C-Bi})$	Bismuth	-0-0	$\nu(\text{C-Tl})$	Thallium
-0-0	$\nu(\text{C-Tl})$	Thallium	-0-0	$\nu(\text{C-Hg})$	Mercury
-0-0	$\nu(\text{C-Hg})$	Mercury	-0-0	$\nu(\text{C-Ag})$	Silver
-0-0	$\nu(\text{C-Ag})$	Silver	-0-0	$\nu(\text{C-Cu})$	Copper
-0-0	$\nu(\text{C-Cu})$	Copper	-0-0	$\nu(\text{C-Zn})$	Zinc
-0-0	$\nu(\text{C-Zn})$	Zinc	-0-0	$\nu(\text{C-Ni})$	Nickel
-0-0	$\nu(\text{C-Ni})$	Nickel	-0-0	$\nu(\text{C-Co})$	Cobalt
-0-0	$\nu(\text{C-Co})$	Cobalt	-0-0	$\nu(\text{C-Fe})$	Iron
-0-0	$\nu(\text{C-Fe})$	Iron	-0-0	$\nu(\text{C-Mn})$	Manganese
-0-0	$\nu(\text{C-Mn})$	Manganese	-0-0	$\nu(\text{C-Cr})$	Chromium
-0-0	$\nu(\text{C-Cr})$	Chromium	-0-0	$\nu(\text{C-Mo})$	Molybdenum
-0-0	$\nu(\text{C-Mo})$	Molybdenum	-0-0	$\nu(\text{C-W})$	Tungsten
-0-0	$\nu(\text{C-W})$	Tungsten	-0-0	$\nu(\text{C-V})$	Vanadium
-0-0	$\nu(\text{C-V})$	Vanadium	-0-0	$\nu(\text{C-Nb})$	Niobium
-0-0	$\nu(\text{C-Nb})$	Niobium	-0-0	$\nu(\text{C-Ta})$	Tantalum
-0-0	$\nu(\text{C-Ta})$	Tantalum	-0-0	$\nu(\text{C-Sb})$	Antimony
-0-0	$\nu(\text{C-Sb})$	Antimony	-0-0	$\nu(\text{C-As})$	Arsenic
-0-0	$\nu(\text{C-As})$	Arsenic	-0-0	$\nu(\text{C-P})$	Phosphorus
-0-0	$\nu(\text{C-P})$	Phosphorus	-0-0	$\nu(\text{C-S})$	Sulfur
-0-0	$\nu(\text{C-S})$	Sulfur	-0-0	$\nu(\text{C-Se})$	Selenium
-0-0	$\nu(\text{C-Se})$	Selenium	-0-0	$\nu(\text{C-Te})$	Tellurium
-0-0	$\nu(\text{C-Te})$	Tellurium	-0-0	$\nu(\text{C-Pb})$	Lead
-0-0	$\nu(\text{C-Pb})$	Lead	-0-0	$\nu(\text{C-Bi})$	Bismuth
-0-0	$\nu(\text{C-Bi})$	Bismuth	-0-0	$\nu(\text{C-Tl})$	Thallium
-0-0	$\nu(\text{C-Tl})$	Thallium	-0-0	$\nu(\text{C-Hg})$	Mercury
-0-0	$\nu(\text{C-Hg})$	Mercury	-0-0	$\nu(\text{C-Ag})$	Silver
-0-0	$\nu(\text{C-Ag})$	Silver	-0-0	$\nu(\text{C-Cu})$	Copper
-0-0	$\nu(\text{C-Cu})$	Copper	-0-0	$\nu(\text{C-Zn})$	Zinc
-0-0	$\nu(\text{C-Zn})$	Zinc	-0-0	$\nu(\text{C-Ni})$	Nickel
-0-0	$\nu(\text{C-Ni})$	Nickel	-0-0	$\nu(\text{C-Co})$	Cobalt
-0-0	$\nu(\text{C-Co})$	Cobalt	-0-0	$\nu(\text{C-Fe})$	Iron
-0-0	$\nu(\text{C-Fe})$	Iron	-0-0	$\nu(\text{C-Mn})$	Manganese
-0-0	$\nu(\text{C-Mn})$	Manganese	-0-0	$\nu(\text{C-Cr})$	Chromium
-0-0	$\nu(\text{C-Cr})$	Chromium	-0-0	$\nu(\text{C-Mo})$	Molybdenum
-0-0					

On page 48, line 14, delete "oleocetylhydroxyethylammonium" and replace with

a1 ~~--oleocetyldimethylhydroxyethylammonium--.~~

On page 49, line 9, in formula (VII), change " $_2 X^-$ " to ~~--2 X--.~~

IN THE CLAIMS:

Please cancel claims 1 and 9-31 without prejudice or disclaimer, amend claims 2-8, and add new claims 32-77 as follows:

In claim 2, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~--A composition according to claim 32, wherein--.~~

a2 on page 80, line 2, after "(I51);" delete "and";

on page 80, line 4, after "(I53);" insert --and--;

on page 80, line 6, delete ";" and insert a period after "(I54)".

a3 3. (Amended) A composition [Composition] according to Claim 2, [characterized in that] wherein the cationic direct dyes are chosen from the compounds having [correspond to the] structures (I1), (I2), (I14), and (I31).

a4 In claim 4, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~--A composition according to claim 32, wherein--.~~

In claim 5, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A~~ composition according to claim 32, wherein

a5

6. (Amended) A composition [Composition] according to Claim 5, [characterized in that] wherein the cationic direct dyes of formula (III) are chosen from the compounds [corresponding to the] having structures (III4), (III5) and (III13).

a6

In claim 7, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A~~ composition according to claim 32, wherein

a7

In claim 8, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A~~ composition according to claim 32, wherein

a8

on page 104, line 1, after "(IV)₇₆", insert --; and--.

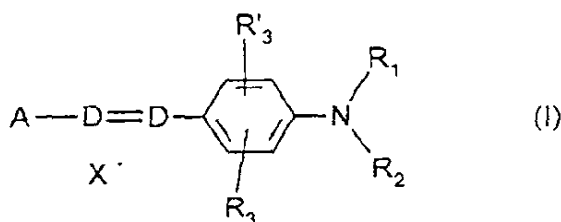
on page 104, line 2, insert a period after "(IV)₇₇".

Please add new claims 32 to 77 as follows:

--32. A composition for dyeing keratinous fibers comprising, in a medium suitable for dyeing,

(i) at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

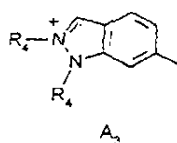
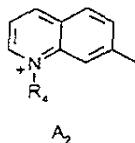
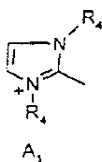
R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

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cont

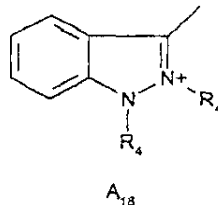
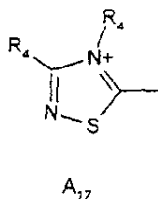
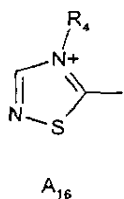
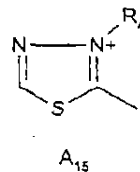
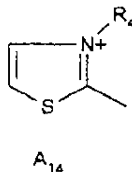
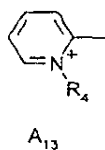
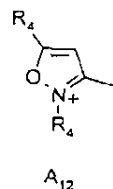
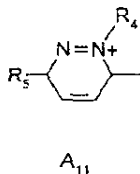
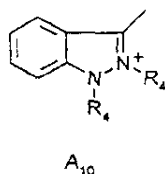
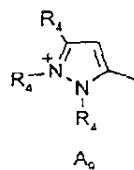
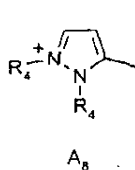
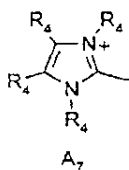
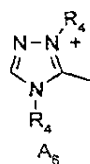
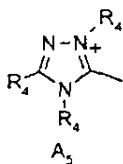
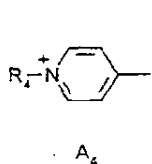
R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

X^- is an anion,

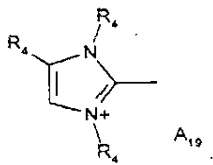
A is a group chosen from the following structures A_1 to A_{19} :



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cont



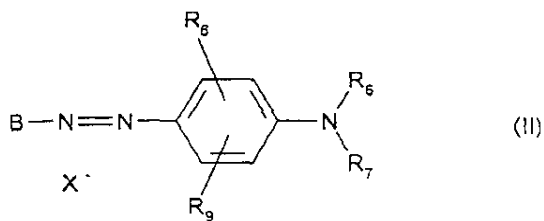
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

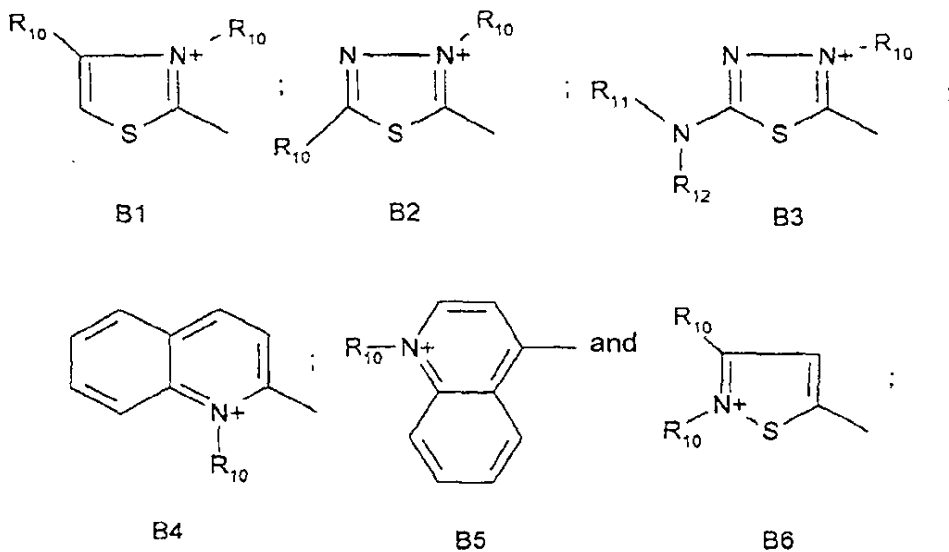
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

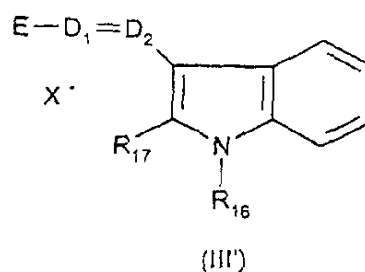
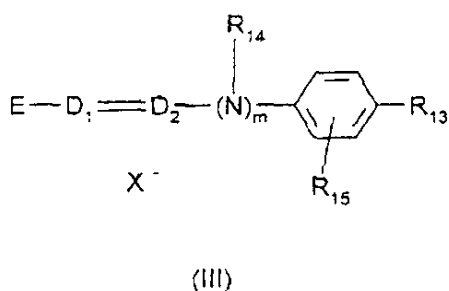
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

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R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

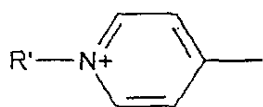
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

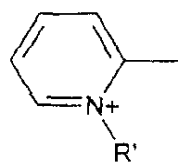
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

E is a group chosen from the following structures E1 to E8:

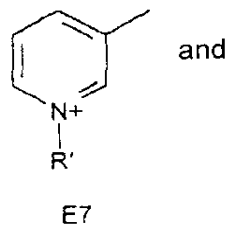
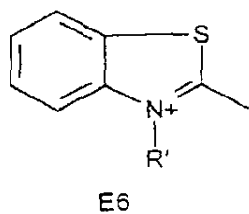
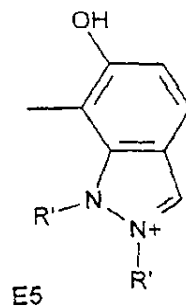
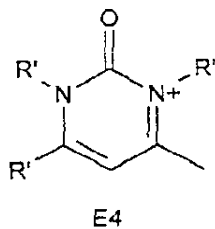
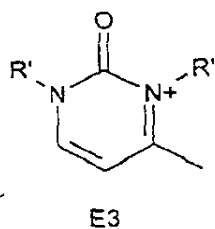


E1

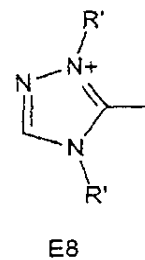


E2

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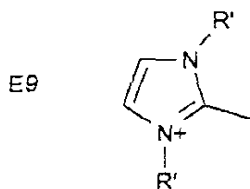


and



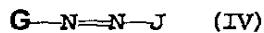
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



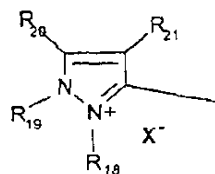
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):

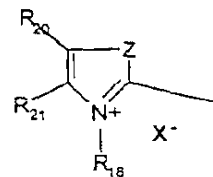


in which:

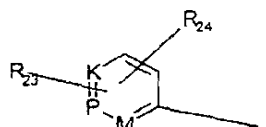
the symbol **G** is a group chosen from the following structures G_1 to G_3 :



G₁



G₂



G₃

in which structures G₁ to G₃,

R₁₈ is chosen from a C₁-C₄ alkyl radical; a phenyl radical which is unsubstituted or substituted with a C₁-C₄ alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

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R_{19} is a C_1 - C_4 alkyl radical or a phenyl radical;

R_{20} and R_{21} , which are identical or different, are chosen from a C_1 - C_4 alkyl radical and a phenyl radical, or form together in G_1 a benzene ring which is substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals, or form together in G_2 a benzene ring which is optionally substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals;

R_{20} may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an $-NR_{19}$ group;

M is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$;

K is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$;

P is a group chosen from $-CH$; $-CR$ wherein R denotes C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$ where r is zero or 1;

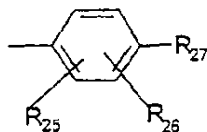
R_{22} is chosen from an O^- atom, a C_1 - C_4 alkoxy radical and a C_1 - C_4 alkyl radical;

R_{23} and R_{24} , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an $-NO_2$ radical;

X^- is an anion;

wherein J is chosen from:

-(a) a group having the following structure J_1 :



in which structure J_1 ,

R_{25} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a radical chosen from -OH, - NO_2 , - NHR_{28} , - $NR_{29}R_{30}$, and - $NHCO(C_1$ - C_4 alkyl), or forms with R_{26} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R_{26} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; and a C_1 - C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R_{27} is chosen from a hydrogen atom, an -OH radical, an - NHR_{28} radical, and an - $NR_{29}R_{30}$ radical;

R_{28} is chosen from a hydrogen atom, a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, and a phenyl radical;

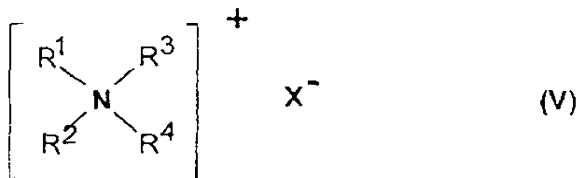
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

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-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

(ii) at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):



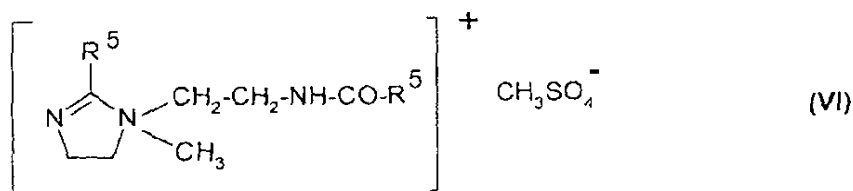
in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl,

aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

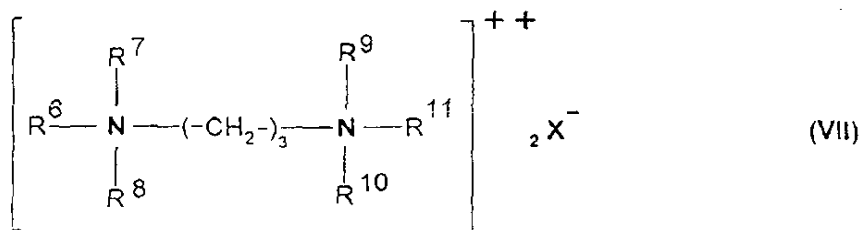
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R^6 is an aliphatic radical comprising 16 to 30 carbon atoms,

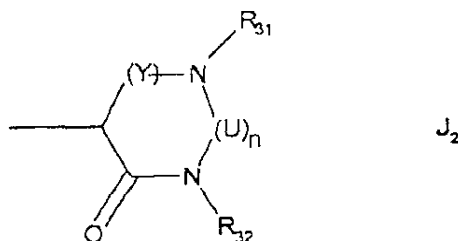
R^7 , R^8 , R^9 , R^{10} and R^{11} are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X^- is an anion chosen from halides, acetates, phosphates and sulphates.

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33. A composition according to Claim 32, wherein in the definition of said at least one cationic direct dye of formulas (I), (II), (III), and (III'), X- is chosen from chloride, methylsulphate, and acetate.

34. A composition according to claim 32, wherein in the definition of said cationic direct dyes of formula (IV), in G₁ and G₂, X⁺ is chosen from chloride, iodide, methylsulphate, ethylsulphate, acetate and perchlorate.

35. A composition according to Claim 32, wherein in the definition of said cationic direct dyes of formula (IV), the 5- or 6- membered nitrogen containing heterocycle group of J is chosen from groups having the structure J₂ below:



in which structure J₂,

R₃₁ and R₃₂, which are identical or different, are chosen from a hydrogen atom, a C₁-C₄ alkyl radical, and a phenyl radical;

Y is a -CO- radical or the radical $\begin{array}{c} \text{CH}_3 \\ | \\ \text{---C=} \end{array}$; and

n = 0 or 1, wherein when n is 1, U is a -CO- radical.

36. A composition according to Claim 32, wherein said at least one cationic direct dye is present in an amount ranging from 0.001 to 10% by weight of the total weight of the composition.

37. A composition according to Claim 36, wherein said at least one cationic direct dye is present in an amount ranging from 0.005 to 5% by weight of the total weight of the composition.

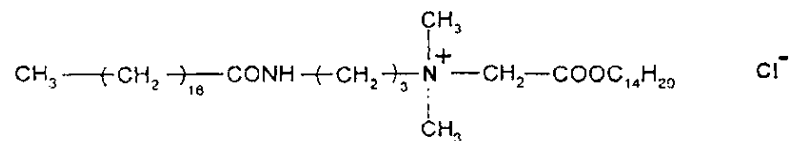
38. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is a dialkyldimethylammonium or alkyltrimethylammonium salt in which the alkyl radical comprises 12 to 22 carbon atoms.

39. A composition according to Claim 38, wherein the quaternary ammonium salt of formula (V) is distearyldimethylammonium chloride, cetyltrimethylammonium chloride, or behenyltrimethylammonium chloride.

40. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is a di(C₁-C₂ alkyl)(C₁₂-C₂₂alkyl)hydroxy(C₁-C₂alkyl)ammonium salt.

41. A composition according to Claim 40, wherein the quaternary ammonium salt of formula (V) is oleocetyldimethylhydroxyethylammonium chloride.

42. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is stearamidopropyldimethyl (myristyl acetate) ammonium chloride of formula:



43. A composition according to Claim 32, wherein said at least one quaternary ammonium salt is present in an amount ranging from 0.01 to 10% by weight of the total weight of the composition.

44. A composition according to Claim 43, wherein said at least one quaternary ammonium salt is present in an amount ranging from 0.05 to 5% by weight of the total weight of the composition.

45. A composition according to Claim 32, wherein said medium suitable for dyeing comprises water or a mixture of water and at least one organic solvent.

46. A composition according to Claim 32, wherein the composition has a pH ranging from 2 to 11.

47. A composition according to Claim 46, wherein the pH ranges from 5 to 10.

48. A composition according to Claim 32, further comprising at least one oxidation base chosen from para-phenylenediamines, bis-phenylalkylenediamines, para-aminophenols, ortho-aminophenols and heterocyclic bases.

49. A composition according to Claim 48, wherein said at least one oxidation base is present in an amount ranging from 0.0005 to 12% by weight of the total weight of the composition.

50. A composition according to Claim 49, wherein said at least one oxidation base is present in an amount ranging from 0.005 to 6% by weight of the total weight of the composition.

51. A composition according to Claim 48, further comprising at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.

52. A composition according to Claim 51, wherein said at least one coupler is present in an amount ranging from 0.0001 to 10% by weight of the total weight of the composition.

53. A composition according to Claim 52, wherein said at least one coupler is present in an amount ranging from 0.005 to 5% by weight of the total weight of the composition.

54. A composition according to Claim 32, wherein the composition further comprises at least one oxidizing agent.

55. A composition according to Claim 54, wherein said at least one oxidizing agent is chosen from peroxides, alkali metal bromates, persalts, and enzymes.

56. A composition according to Claim 55, wherein said peroxides are chosen from hydrogen peroxide and urea peroxide.

57. A composition according to Claim 55, wherein said persalts are chosen from perborates and persulphates.

58. A composition according to Claim 55, wherein said enzymes are chosen from peroxidases, laccases, and two-electron oxidoreductases.

59. A composition according to Claim 32, wherein said keratinous fibers are human keratinous fibers.

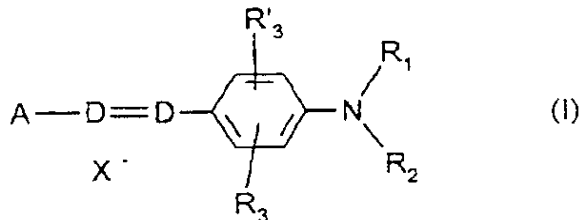
60. A composition according to Claim 59, wherein said human keratinous fibers are hair.

61. A method for dyeing keratinous fibers, comprising:

applying to said keratinous fibers for a time sufficient to develop a desired color,
a composition comprising, in a medium suitable for dyeing,

(i) at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

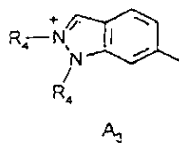
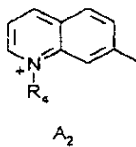
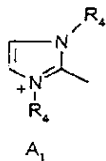
R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

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R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

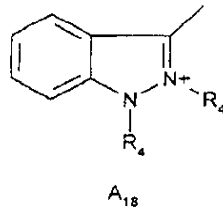
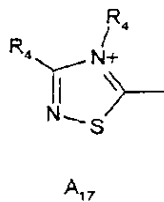
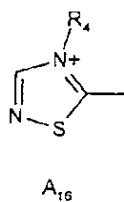
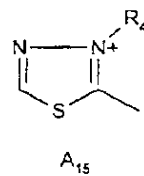
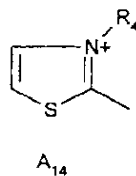
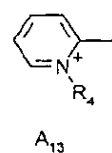
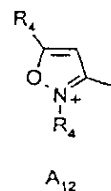
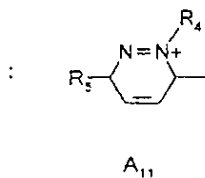
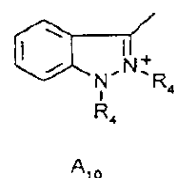
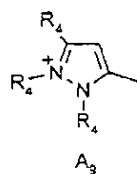
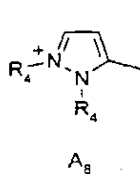
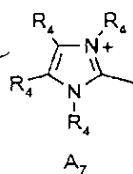
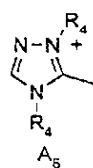
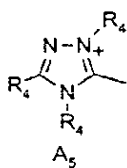
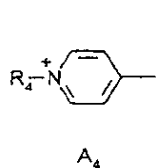
X^- is an anion,

A is a group chosen from the following structures A_1 to A_{19} :

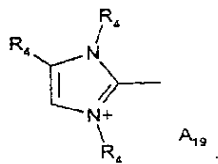


A9
Cont

1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352</
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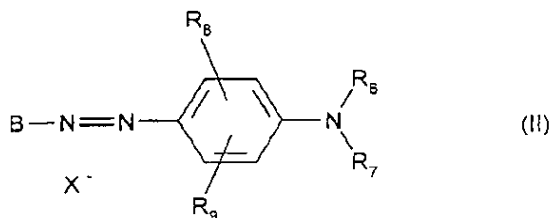
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

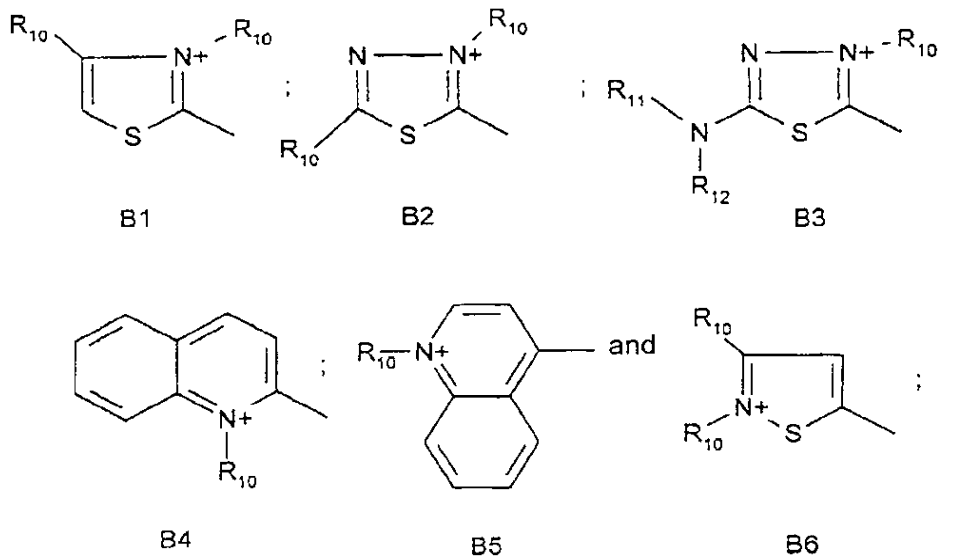
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

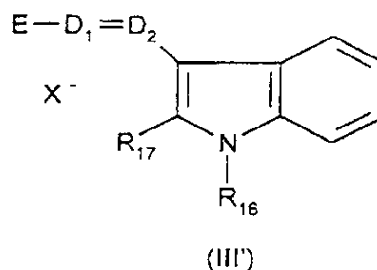
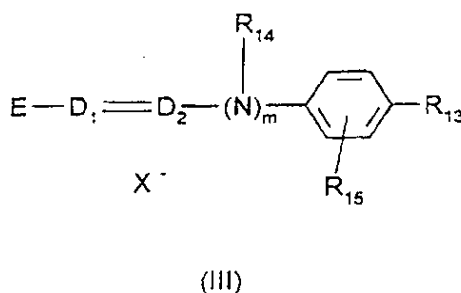
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group.

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

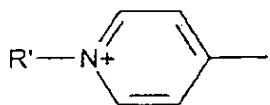
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

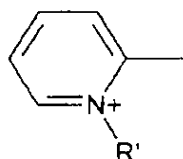
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

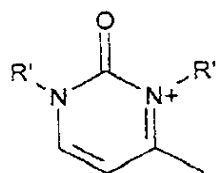
E is a group chosen from the following structures E1 to E8:



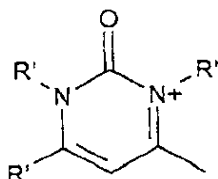
E1



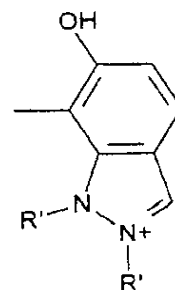
E2



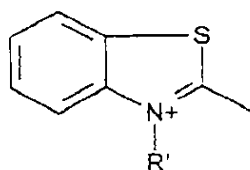
E3



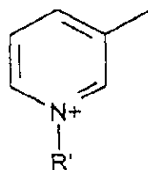
E4



E5

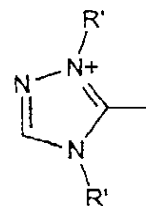


E6



E7

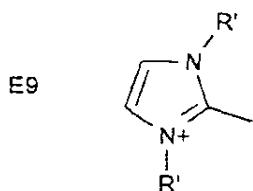
and



E8

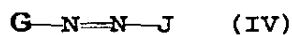
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



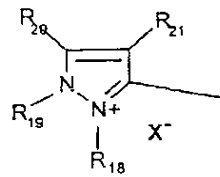
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):

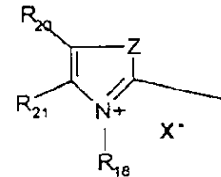


in which:

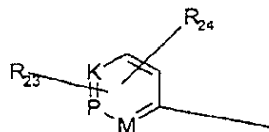
the symbol G is a group chosen from the following structures G_1 to G_3 :



G₁



G₂



G₃

in which structures G₁ to G₃,

R₁₈ is chosen from a C₁-C₄ alkyl radical; a phenyl radical which is unsubstituted or substituted with a C₁-C₄ alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

[illegible]

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

K is a group chosen from -CH₃; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X_i)_n;

R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

X^- is an anion;

-(a) a group having the following structure J₁:

[illegible]

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

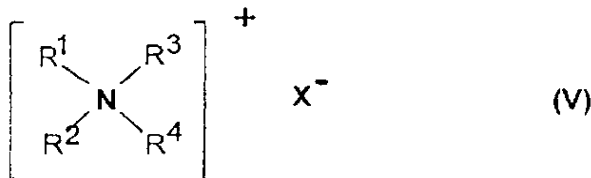
R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

(ii) at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):



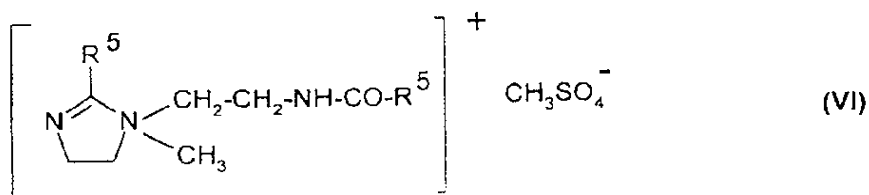
in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl,

aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

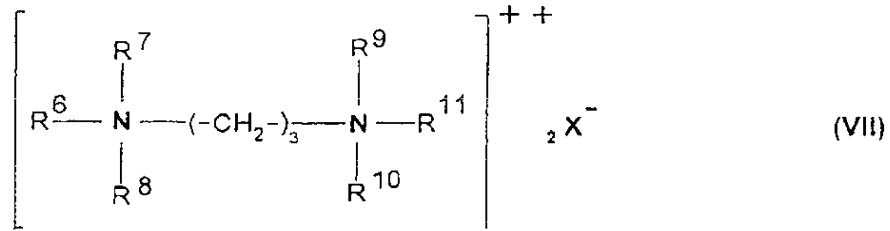
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R^6 is an aliphatic radical comprising 16 to 30 carbon atoms,

R^7 , R^8 , R^9 , R^{10} and R^{11} are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X^- is an anion chosen from halides, acetates, phosphates and sulphates.

62. A method according to claim 61, further comprising rinsing said keratinous fibers after applying said composition thereon.

63. A method according to claim 62, further comprising
washing said keratinous fibers with shampoo after said rinsing;
and rinsing again said keratinous fibers after said washing.

64. A method according to claim 63, further comprising, after said washing and rinsing, drying said keratinous fibers.

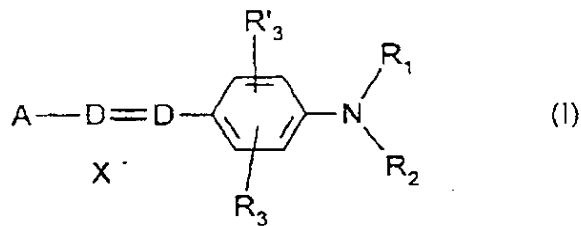
99
Cont

66. A method according to claim 65, wherein said human keratinous fibers are hair.

[illegible]

67. A method for dyeing keratinous fibers, comprising
separately storing a first composition and a second composition;
mixing said first composition with said second composition before applying the
resultant mixture to said keratinous fibers; and
applying said mixture to the keratinous fibers,
wherein said first composition comprises, in a medium suitable for dyeing, at
least one oxidation base and
at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

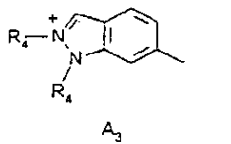
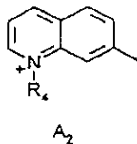
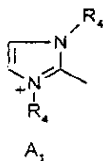
29
Cont

R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

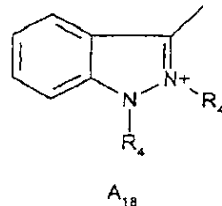
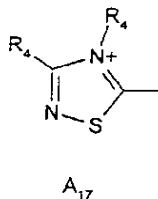
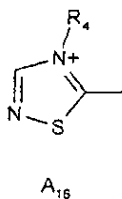
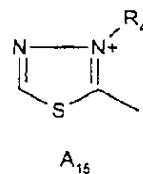
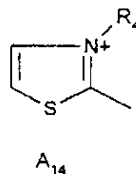
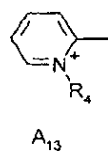
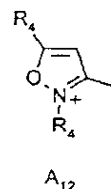
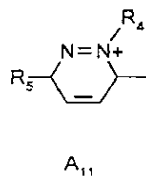
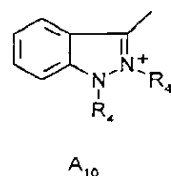
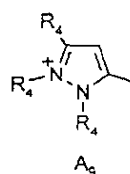
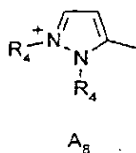
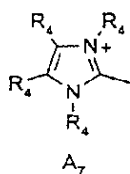
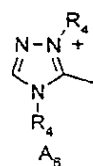
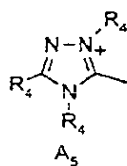
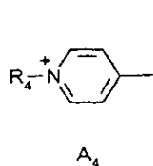
R₃ and R'₃, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an acetyloxy radical,

X⁻ is an anion,

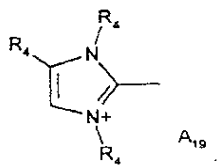
A is a group chosen from the following structures A₁ to A₁₉:



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cont



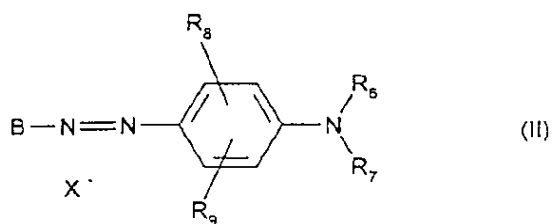
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

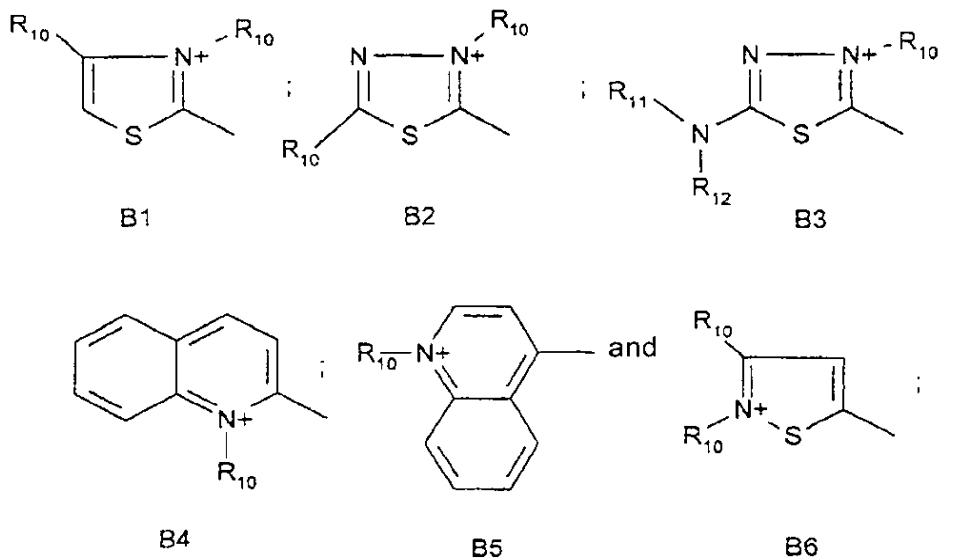
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

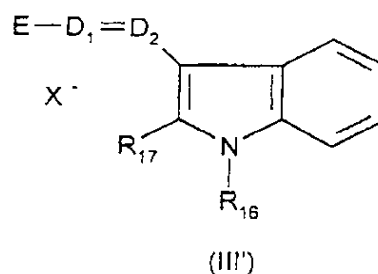
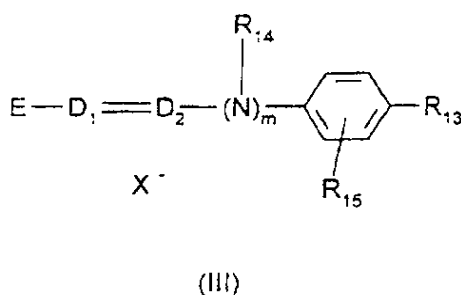
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R₁₅ is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R₁₆ and R₁₇, which are identical or different, are a hydrogen atom or a C₁-C₄ alkyl radical,

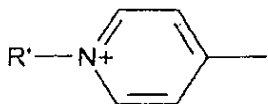
D₁ and D₂, which are identical or different, are a nitrogen atom or a -CH group,

m = 0 or 1,

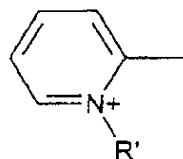
with the proviso that when R₁₃ is an unsubstituted amino group, then D₁ and D₂ simultaneously are -CH groups and m = 0,

X⁻ is an anion,

E is a group chosen from the following structures E1 to E8:

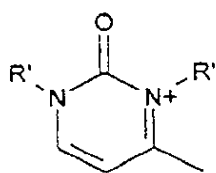


E1

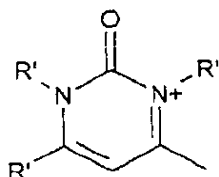


E2

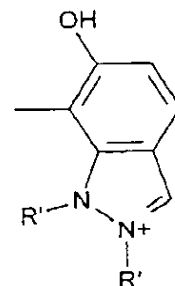
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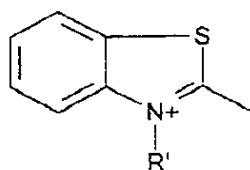
E3



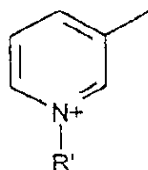
E4



E5

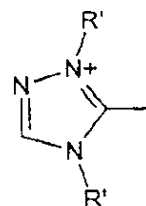


E6



E7

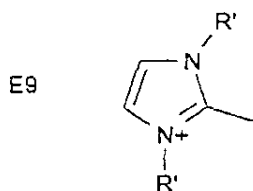
and



E8

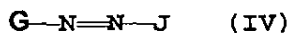
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



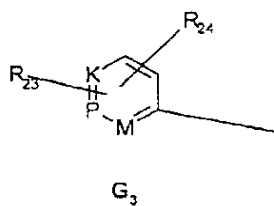
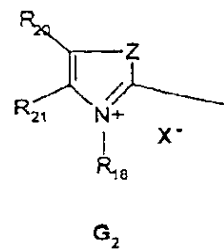
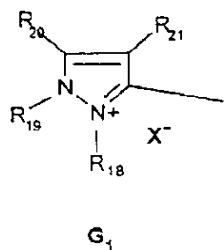
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol **G** is a group chosen from the following structures G_1 to G_3 :



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

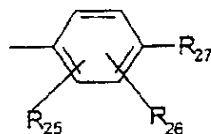
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



J₁

in which structure J₁,

R₂₅ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and a radical chosen from -OH, -NO₂, -NHR₂₈, -NR₂₉R₃₀, and -NHCO(C₁-C₄alkyl), or forms with R₂₆ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

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Cont

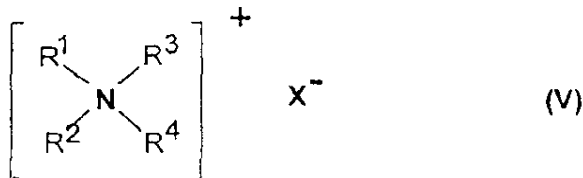
R_{29} and R_{30} , which are identical or different, are chosen from a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, and a C_2 - C_4 polyhydroxyalkyl radical; and

-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C_1 - C_4 alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

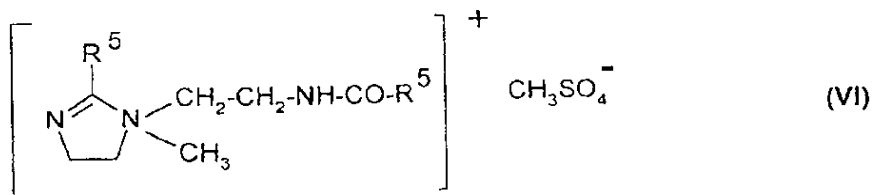


in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

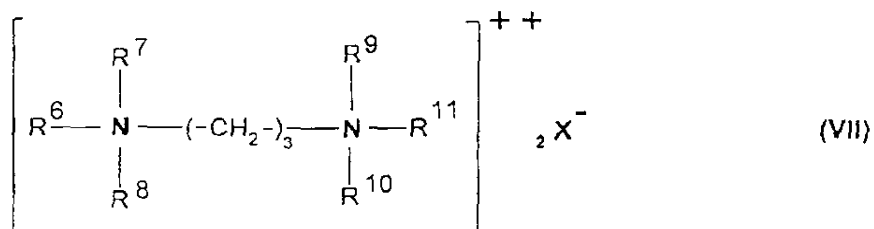
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

68. A method according to claim 67, wherein said keratinous fibers are human keratinous fibers.

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Attorney Docket No.: 05725.0577-00

69. A method according to claim 68, wherein said human keratinous fibers are

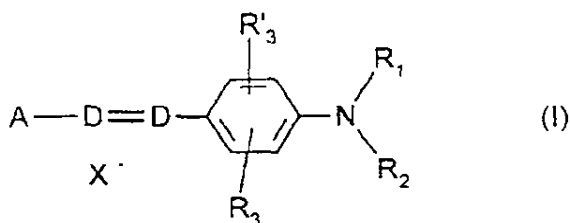
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LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, DC 20005
202-408-4000

70. A method for dyeing keratinous fibers, comprising
separately storing a first composition and a second composition;
mixing said first composition with said second composition before applying the
resultant mixture to said keratinous fibers; and
applying said mixture to the keratinous fibers,
wherein said first composition comprises, in a medium suitable for dyeing:
at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

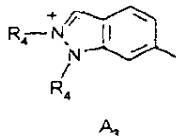
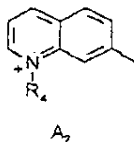
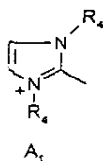
R₁ and R₂, which are identical or different, are chosen from a hydrogen
atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂

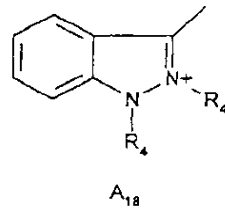
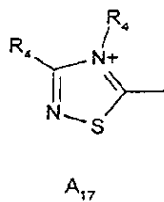
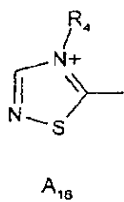
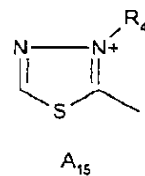
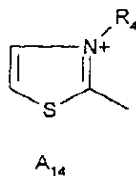
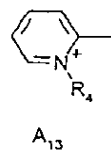
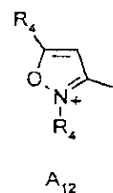
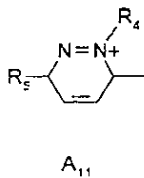
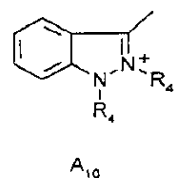
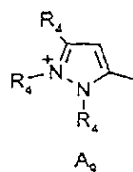
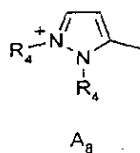
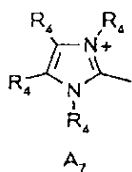
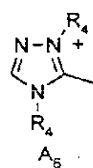
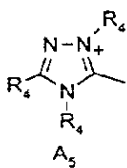
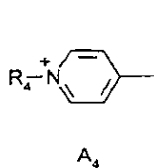
radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

R₃ and R'₃, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an acetyloxy radical,

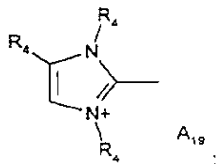
X⁻ is an anion,

A is a group chosen from the following structures A₁ to A₁₉:





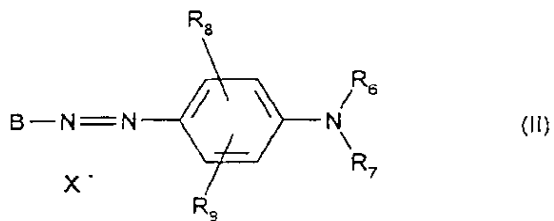
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

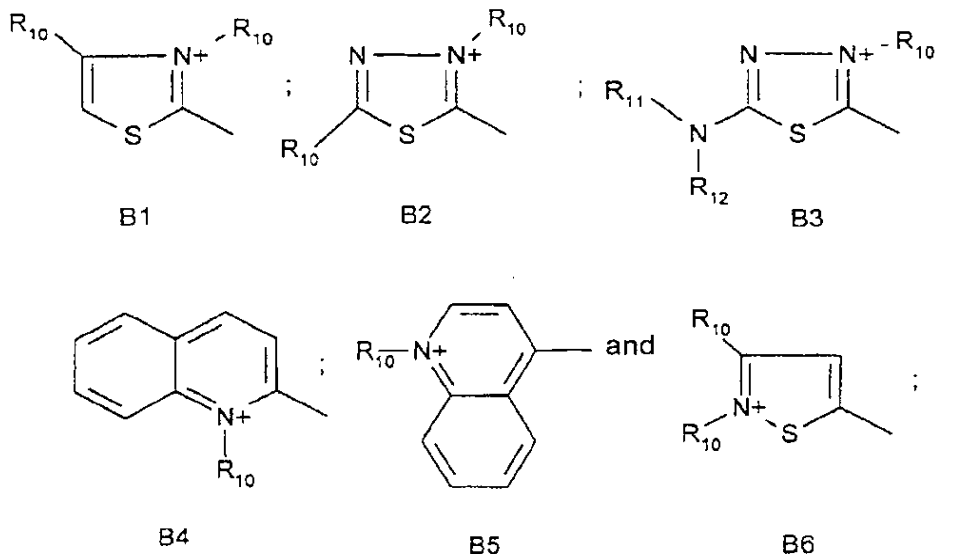
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

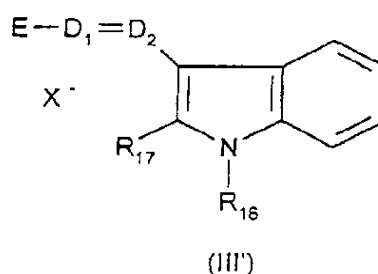
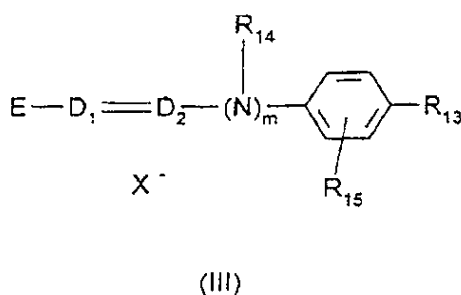
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

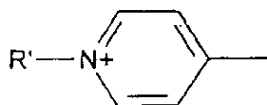
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

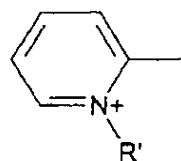
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X' is an anion,

E is a group chosen from the following structures E1 to E8:

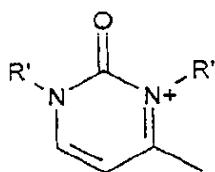


E1

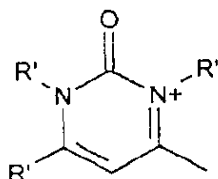


E2

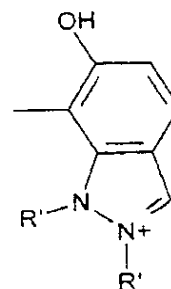
29
Cont



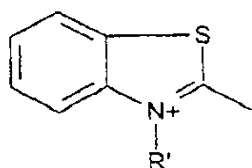
E3



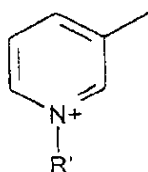
E4



E5

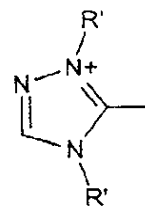


E6



E7

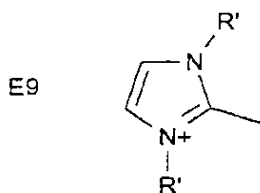
and



E8

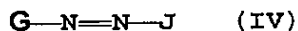
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



in which R' is a C_1 - C_4 alkyl radical, and

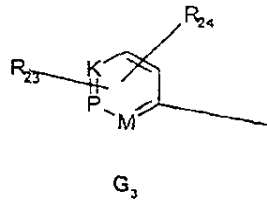
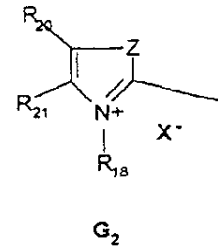
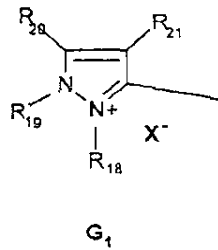
d) cationic direct dyes of formula (IV):



in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :

A9
Cont 4



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r where r is zero or 1;

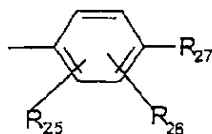
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



J₁

in which structure J₁,

R₂₅ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and a radical chosen from -OH, -NO₂, -NHR₂₈, -NR₂₉R₃₀, and -NHCO(C₁-C₄alkyl), or forms with R₂₆ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

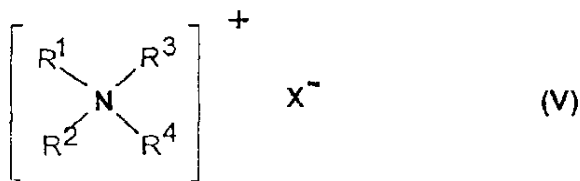
29
Cont 4

-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

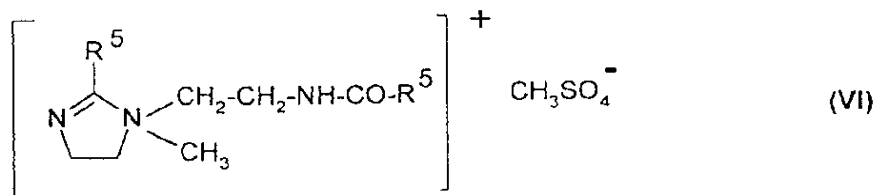


in which

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxyalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

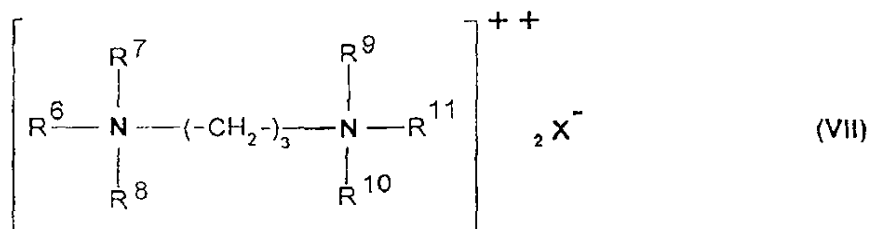
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

71. A method according to claim 70, wherein said keratinous fibers are human keratinous fibers.

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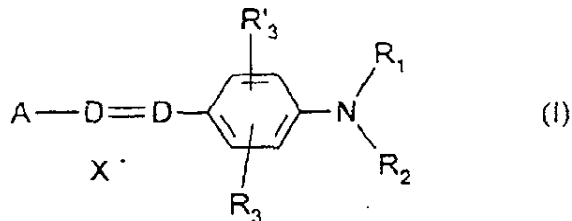
[illegible]

- 71 -

73. A multicompartment dyeing kit wherein a first compartment contains a first composition and a second compartment contains a second composition,

wherein said first composition comprises, in a medium suitable for dyeing, at least one oxidation base and at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

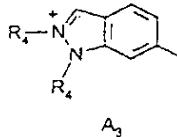
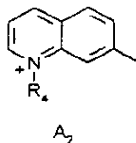
R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle

[illegible]

X^- is an anion,

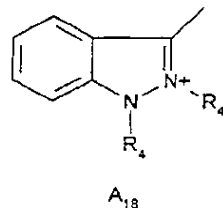
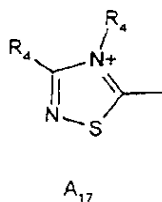
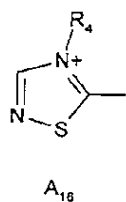
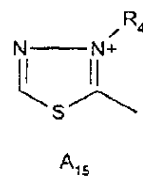
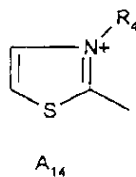
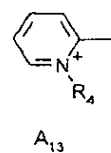
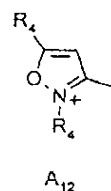
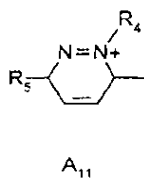
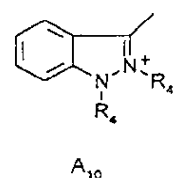
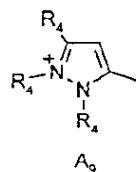
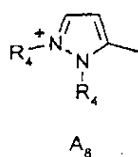
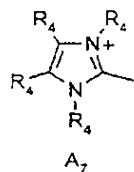
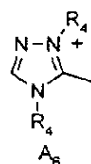
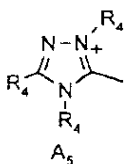
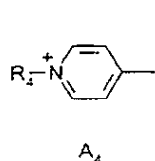
C1=CN(R4)C(R4)=C1

A₁

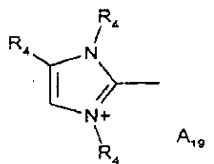


A9
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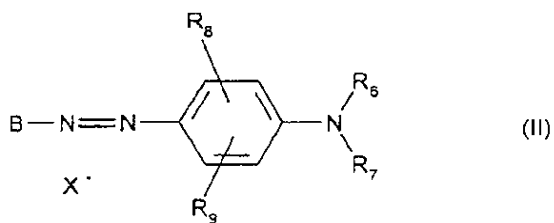
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

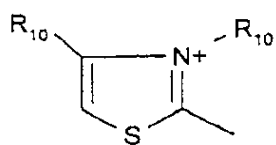
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a $-CN$ radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

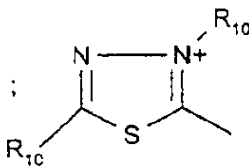
R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a $-CN$ radical,

X^- is an anion,

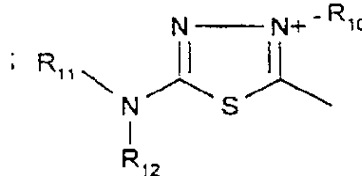
B represents a group chosen from the following structures B1 to B6:



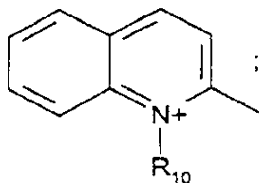
B1



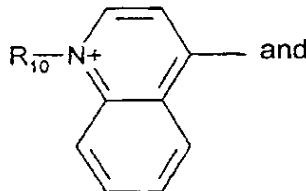
B2



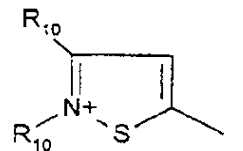
B3



B4



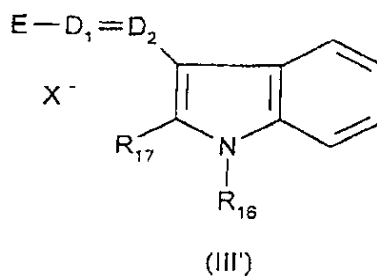
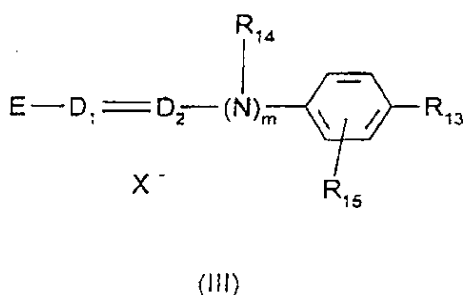
B5



B6

in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

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Cont

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

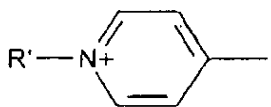
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

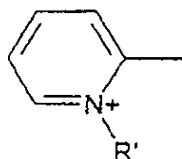
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

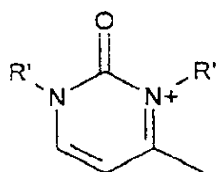
E is a group chosen from the following structures E1 to E8:



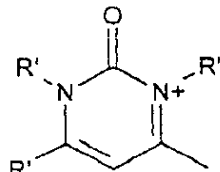
E1



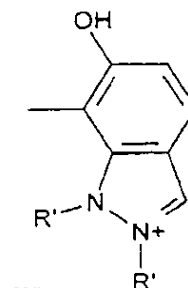
E2



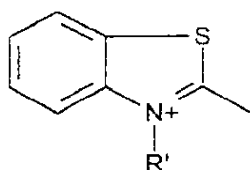
E3



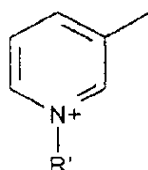
E4



E5

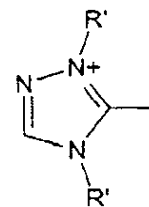


E6



E7

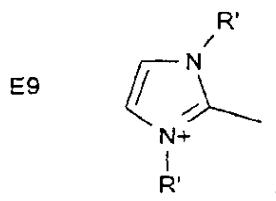
and



E8

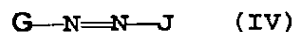
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



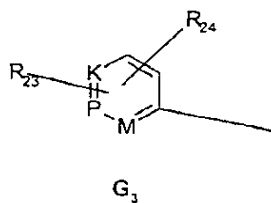
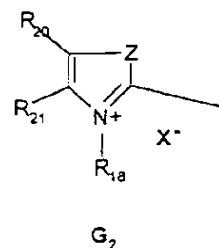
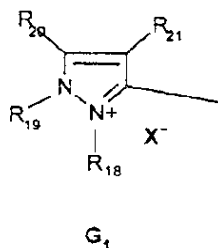
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol **G** is a group chosen from the following structures G_1 to G_3 :



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

A9 Cont
R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻);

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻);

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

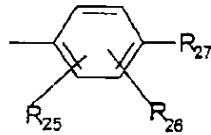
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



J₁

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Cont

in which structure J₁,

R₂₅ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and a radical chosen from -OH, -NO₂, -NHR₂₈, -NR₂₉R₃₀, and -NHCO(C₁-C₄alkyl), or forms with R₂₆ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

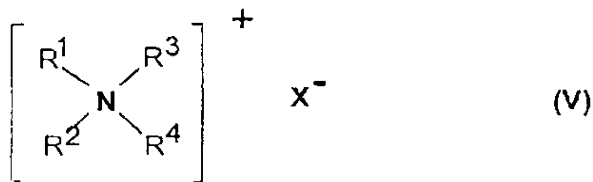
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

29
Cont
-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

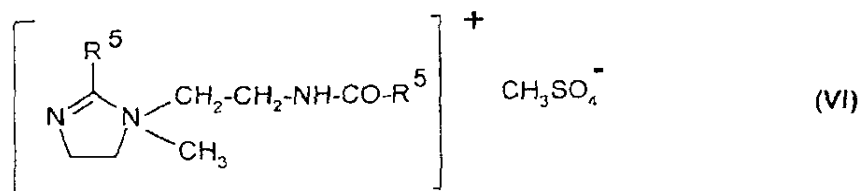


in which

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

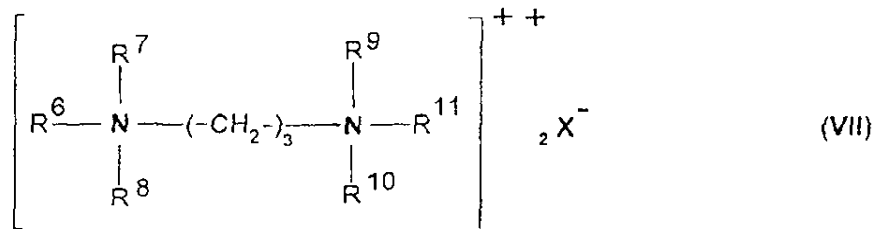
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

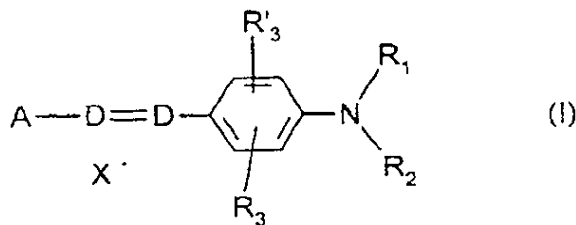
R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

74. A multicompartment dyeing kit wherein a first compartment contains a first composition and a second compartment contains a second composition,

wherein said first composition comprises, in a medium suitable for dyeing:

at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

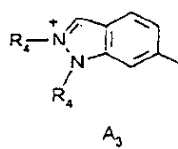
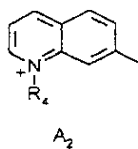
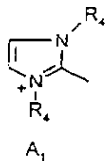
D is a nitrogen atom or a -CH group,

R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

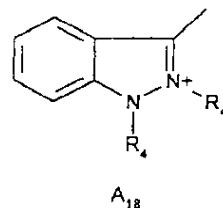
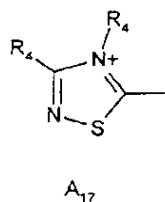
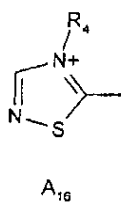
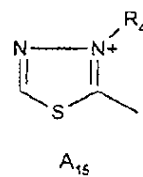
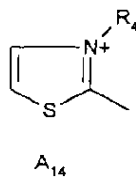
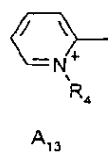
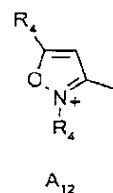
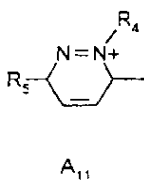
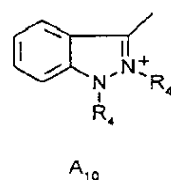
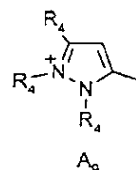
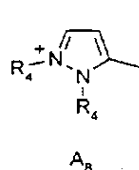
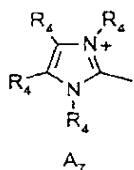
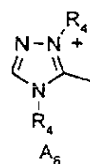
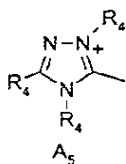
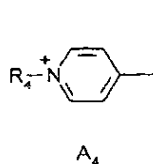
R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

X^- is an anion,

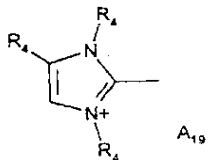
A is a group chosen from the following structures A_1 to A_{19} :



A9
Cont



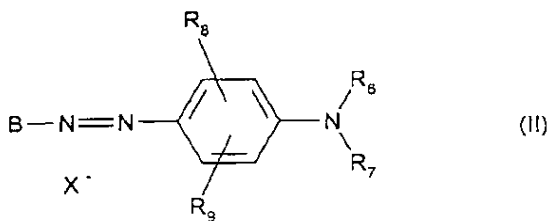
and



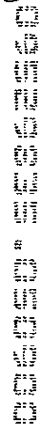
in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):

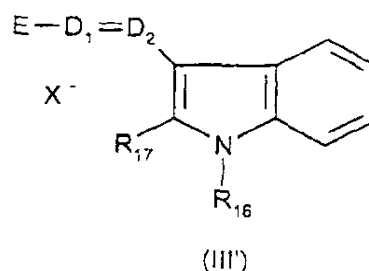
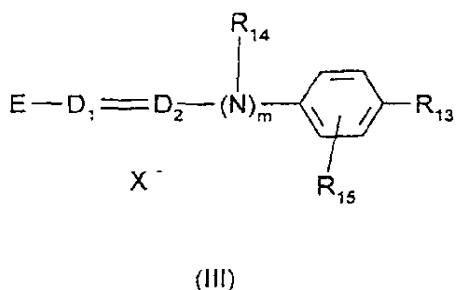


Year	Country	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)	Urban population density (per sq km)
1950	India	360	100	28	170	1,000
1955	India	380	110	29	180	1,100
1960	India	400	120	30	190	1,200
1965	India	420	130	31	200	1,300
1970	India	440	140	32	210	1,400
1975	India	460	150	33	220	1,500
1980	India	480	160	33	230	1,600
1985	India	500	170	34	240	1,700
1990	India	520	180	35	250	1,800
1995	India	540	190	35	260	1,900
2000	India	560	200	36	270	2,000
2005	India	580	210	36	280	2,100
2010	India	600	220	37	290	2,200
2015	India	620	230	37	300	2,300
2020	India	640	240	38	310	2,400
2025	India	660	250	38	320	2,500
2030	India	680	260	38	330	2,600
2035	India	700	270	39	340	2,700
2040	India	720	280	39	350	2,800
2045	India	740	290	39	360	2,900
2050	India	760	300	40	370	3,000

[illegible][illegible][illegible][illegible][illegible]

in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

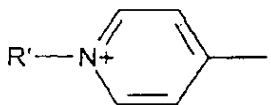
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

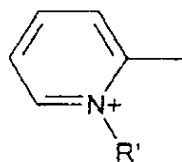
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

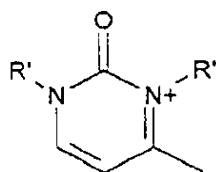
E is a group chosen from the following structures E1 to E8:



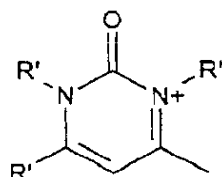
E1



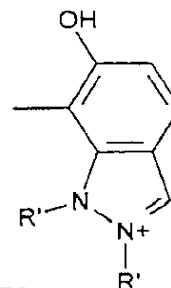
E2



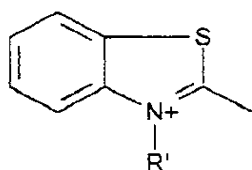
E3



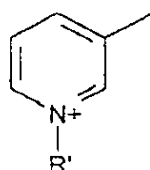
E4



E5

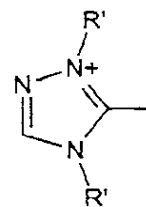


E6



E7

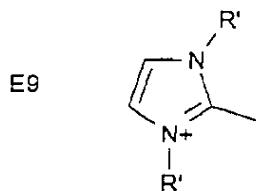
and



E8

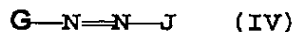
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



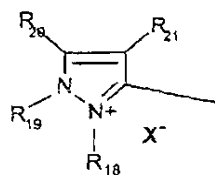
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):

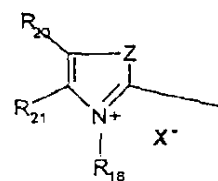


in which:

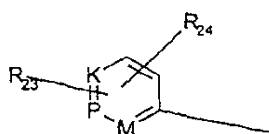
the symbol G is a group chosen from the following structures G_1 to G_3 :



G₁



G₂



G₃

in which structures G₁ to G₃,

R₁₈ is chosen from a C₁-C₄ alkyl radical; a phenyl radical which is unsubstituted or substituted with a C₁-C₄ alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

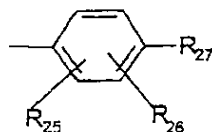
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



in which structure J_1 ,

R_{25} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a radical chosen from $-OH$, $-NO_2$, $-NHR_{28}$, $-NR_{29}R_{30}$, and $-NHCO(C_1$ - C_4 alkyl), or forms with R_{26} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R_{26} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; and a C_1 - C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R_{27} is chosen from a hydrogen atom, an $-OH$ radical, an $-NHR_{28}$ radical, and an $-NR_{29}R_{30}$ radical;

R_{28} is chosen from a hydrogen atom, a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, and a phenyl radical;

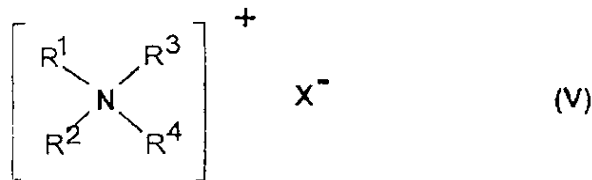
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

29
cont
- (b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):



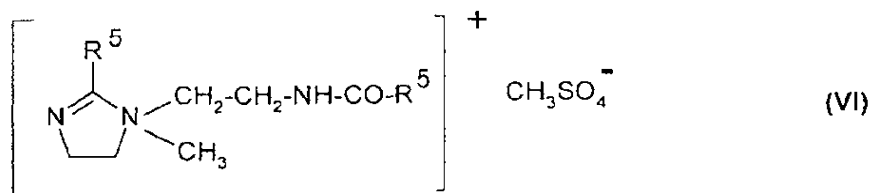
in which

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Cont

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

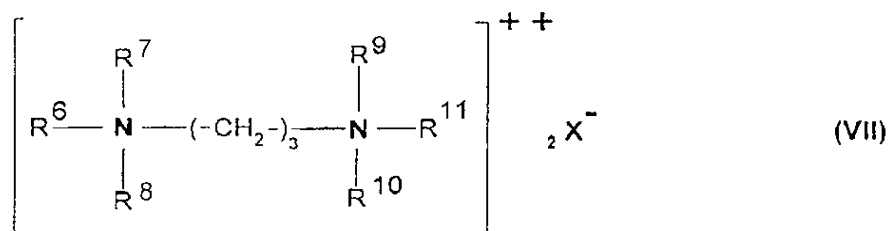
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

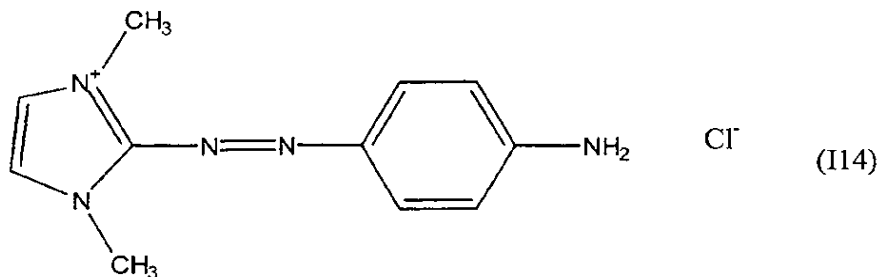
29
Conf

[illegible]CN1C=CC=C1N(C)=[N+]#Nc2ccc(NC)cc2.[Cl-] (11)

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FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

76. A composition for dyeing keratinous fibers, comprising:

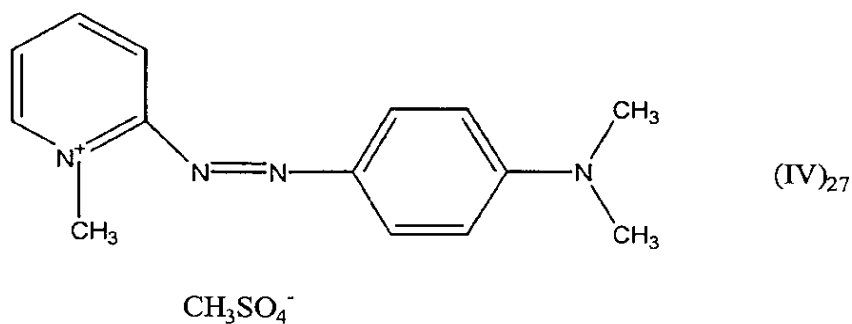
a cationic direct dye of structure (I14):



and behenyltrimethylammonium chloride.

77. A composition for dyeing keratinous fibers, comprising:

a cationic direct dye of structure (IV)₂₇:



and cetyltrimethylammonium chloride.--

On page 48, line 14, delete "oleocetylhydroxyethylammonium" and replace with

a1 ~~oleocetylhydroxyethylammonium~~
--oleocetyldimethylhydroxyethylammonium--.

On page 49, line 9, in formula (VII), change " X^- " to -- $2 X^-$ --.

IN THE CLAIMS:

Please cancel claims 1 and 9-31 without prejudice or disclaimer, amend claims 2-8, and add new claims 32-77 as follows:

a2 In claim 2, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A composition according to claim 1, characterized in that~~ A composition according to claim 32, wherein

on page 80, line 2, after "(I51);" delete "and";

on page 80, line 4, after "(I53);" insert --and--;

on page 80, line 6, delete "," and insert a period after "(I54)".

a3 3. (Amended) A composition [Composition] according to Claim 2, [characterized in that] wherein the cationic direct dyes are chosen from the compounds having [correspond to the] structures (I1), (I2), (I14), and (I31).

a4 In claim 4, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A composition according to claim 1, characterized in that~~ A composition according to claim 32, wherein

In claim 5, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A composition according to claim 32, wherein~~.

a5

6. (Amended) A composition [Composition] according to Claim 5, [characterized in that] wherein the cationic direct dyes of formula (III) are chosen from the compounds [corresponding to the] having structures (III4), (III5) and (III13).

a6

In claim 7, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A composition according to claim 32, wherein~~.

a7

In claim 8, lines 1-2, delete "Composition according to claim 1, characterized in that" and replace with ~~A composition according to claim 32, wherein~~.

a8

on page 104, line 1, after "(IV)₇₆", insert --; and--.

on page 104, line 2, insert a period after "(IV)₇₇".

Please add new claims 32 to 77 as follows:

(i) at least one cationic direct dye chosen from:

$$\text{A}-\underset{\text{X}^-}{\text{D}=\text{D}}-\text{C}_6\text{H}_2(\text{R}_3)_2-\text{N}(\text{R}_1)(\text{R}_2) \quad (\text{I})$$

D is a nitrogen atom or a -CH group,

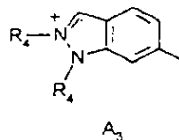
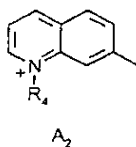
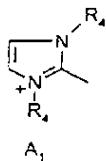
R_1 and R_2 , which are identical or different, are chosen from a hydrogen atom; a C_1 - C_4 alkyl radical which is unsubstituted or substituted with a -CN, -OH or - NH_2 radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C_1 - C_4 alkyl radical; and a 4'-aminophenyl radical,

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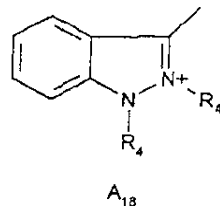
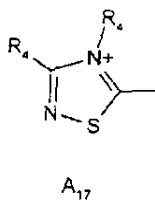
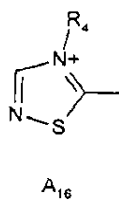
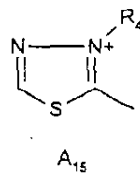
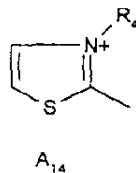
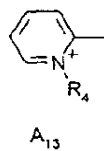
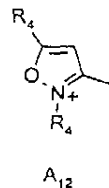
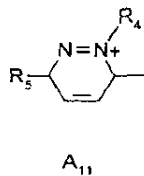
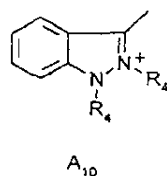
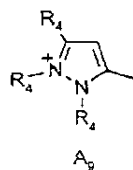
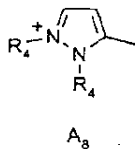
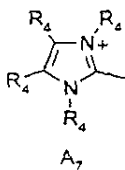
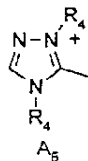
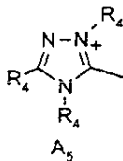
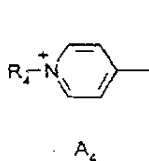
R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

X^- is an anion,

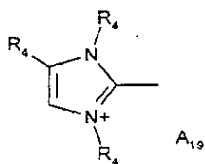
A is a group chosen from the following structures A_1 to A_{19} :



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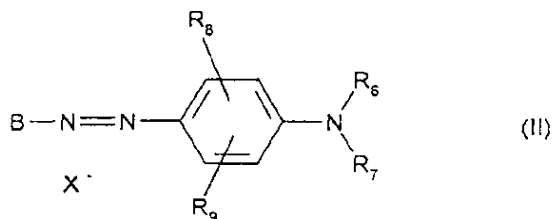
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

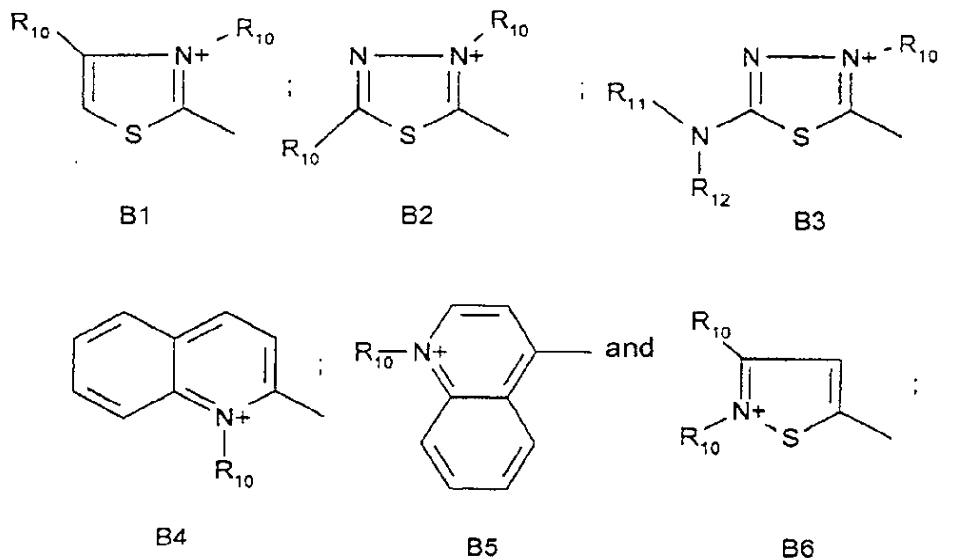
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

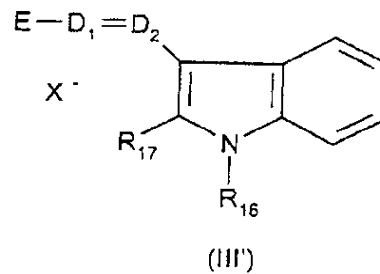
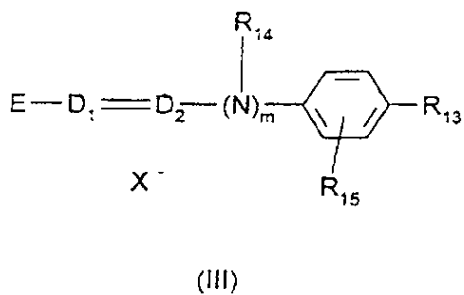
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

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R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

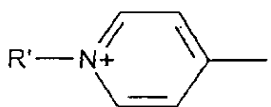
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

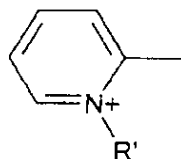
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

E is a group chosen from the following structures E1 to E8:

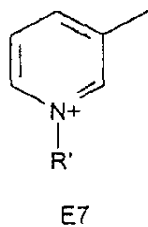
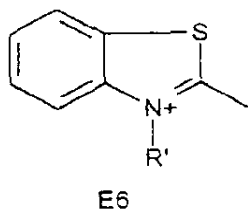
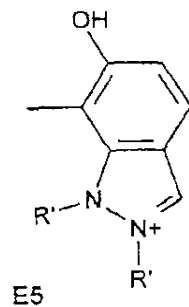
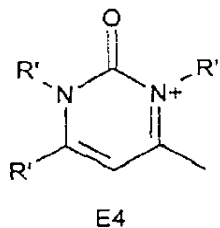
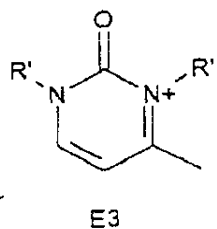


E1

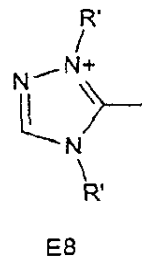


E2

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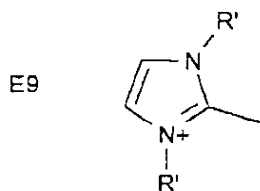


and



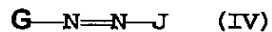
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



in which R' is a C_1 - C_4 alkyl radical, and

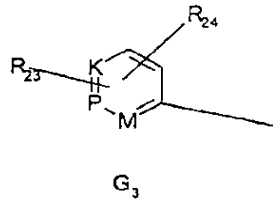
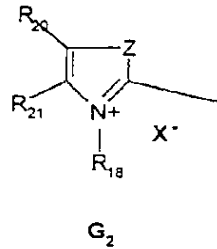
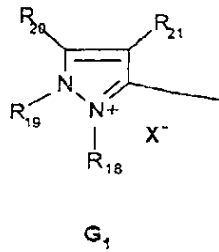
d) cationic direct dyes of formula (IV):



in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :

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in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

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R_{19} is a C_1 - C_4 alkyl radical or a phenyl radical;

R_{20} and R_{21} , which are identical or different, are chosen from a C_1 - C_4 alkyl radical and a phenyl radical, or form together in G_1 a benzene ring which is substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals, or form together in G_2 a benzene ring which is optionally substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals;

R_{20} may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an $-NR_{19}$ group;

M is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$;

K is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$;

P is a group chosen from $-CH$; $-CR$ wherein R denotes C_1 - C_4 alkyl; and $-NR_{22}(X^*)_r$, where r is zero or 1;

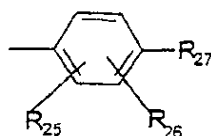
R_{22} is chosen from an O^- atom, a C_1 - C_4 alkoxy radical and a C_1 - C_4 alkyl radical;

R_{23} and R_{24} , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an $-NO_2$ radical;

X^* is an anion;

wherein J is chosen from:

-(a) a group having the following structure J_1 :



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in which structure J₁,

R₂₅ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and a radical chosen from -OH, -NO₂, -NHR₂₈, -NR₂₉R₃₀, and -NHCO(C₁-C₄alkyl), or forms with R₂₆ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

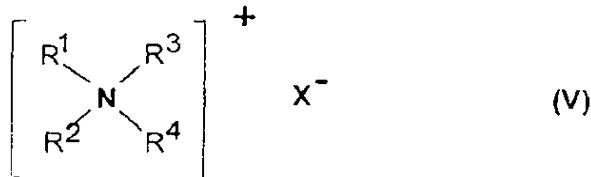
R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

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(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

(ii) at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):



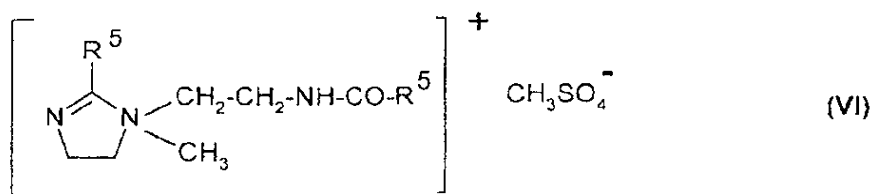
in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl,

aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

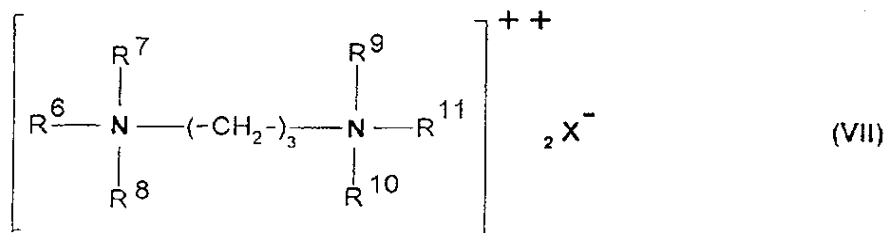
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

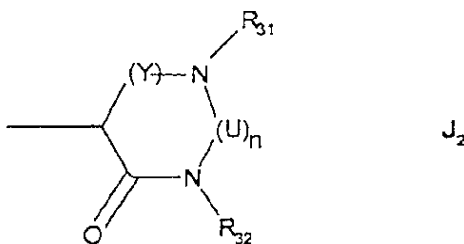
R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

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33. A composition according to Claim 32, wherein in the definition of said at least one cationic direct dye of formulas (I), (II), (III), and (III'), X- is chosen from chloride, methylsulphate, and acetate.

34. A composition according to claim 32, wherein in the definition of said cationic direct dyes of formula (IV), in G₁ and G₂, X⁻ is chosen from chloride, iodide, methylsulphate, ethylsulphate, acetate and perchlorate.

35. A composition according to Claim 32, wherein in the definition of said cationic direct dyes of formula (IV), the 5- or 6- membered nitrogen containing heterocycle group of J is chosen from groups having the structure J₂ below:



in which structure J₂,

R₃₁ and R₃₂, which are identical or different, are chosen from a hydrogen atom, a C₁-C₄ alkyl radical, and a phenyl radical;

Y is a -CO- radical or the radical $\begin{array}{c} \text{CH}_3 \\ | \\ \text{---C=} \end{array}$; and

n = 0 or 1, wherein when n is 1, U is a -CO- radical.

36. A composition according to Claim 32, wherein said at least one cationic direct dye is present in an amount ranging from 0.001 to 10% by weight of the total weight of the composition.

37. A composition according to Claim 36, wherein said at least one cationic direct dye is present in an amount ranging from 0.005 to 5% by weight of the total weight of the composition.

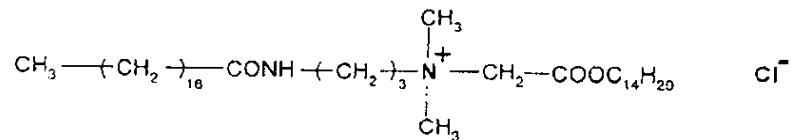
38. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is a dialkyldimethylammonium or alkyltrimethylammonium salt in which the alkyl radical comprises 12 to 22 carbon atoms.

39. A composition according to Claim 38, wherein the quaternary ammonium salt of formula (V) is distearyldimethylammonium chloride, cetyltrimethylammonium chloride, or behenyltrimethylammonium chloride.

40. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is a di(C₁-C₂ alkyl)(C₁₂-C₂₂alkyl)hydroxy(C₁-C₂alkyl)ammonium salt.

41. A composition according to Claim 40, wherein the quaternary ammonium salt of formula (V) is oleocetyldimethylhydroxyethylammonium chloride.

42. A composition according to Claim 32, wherein the quaternary ammonium salt of formula (V) is stearamidopropyldimethyl (myristyl acetate) ammonium chloride of formula:



43. A composition according to Claim 32, wherein said at least one quaternary ammonium salt is present in an amount ranging from 0.01 to 10% by weight of the total weight of the composition.

44. A composition according to Claim 43, wherein said at least one quaternary ammonium salt is present in an amount ranging from 0.05 to 5% by weight of the total weight of the composition.

45. A composition according to Claim 32, wherein said medium suitable for dyeing comprises water or a mixture of water and at least one organic solvent.

46. A composition according to Claim 32, wherein the composition has a pH ranging from 2 to 11.

47. A composition according to Claim 46, wherein the pH ranges from 5 to 10.

48. A composition according to Claim 32, further comprising at least one oxidation base chosen from para-phenylenediamines, bis-phenylalkylenediamines, para-aminophenols, ortho-aminophenols and heterocyclic bases.

49. A composition according to Claim 48, wherein said at least one oxidation base is present in an amount ranging from 0.0005 to 12% by weight of the total weight of the composition.

50. A composition according to Claim 49, wherein said at least one oxidation base is present in an amount ranging from 0.005 to 6% by weight of the total weight of the composition.

51. A composition according to Claim 48, further comprising at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.

52. A composition according to Claim 51, wherein said at least one coupler is present in an amount ranging from 0.0001 to 10% by weight of the total weight of the composition.

53. A composition according to Claim 52, wherein said at least one coupler is present in an amount ranging from 0.005 to 5% by weight of the total weight of the composition.

54. A composition according to Claim 32, wherein the composition further comprises at least one oxidizing agent.

55. A composition according to Claim 54, wherein said at least one oxidizing agent is chosen from peroxides, alkali metal bromates, persalts, and enzymes.

56. A composition according to Claim 55, wherein said peroxides are chosen from hydrogen peroxide and urea peroxide.

57. A composition according to Claim 55, wherein said persalts are chosen from perborates and persulphates.

58. A composition according to Claim 55, wherein said enzymes are chosen from peroxidases, laccases, and two-electron oxidoreductases.

59. A composition according to Claim 32, wherein said keratinous fibers are human keratinous fibers.

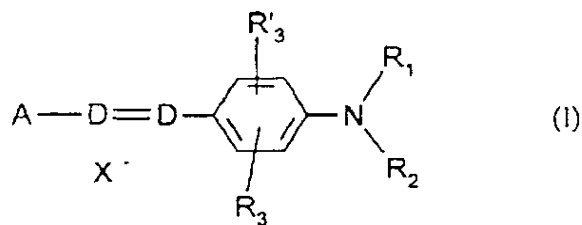
60. A composition according to Claim 59, wherein said human keratinous fibers are hair.

61. A method for dyeing keratinous fibers, comprising:

applying to said keratinous fibers for a time sufficient to develop a desired color,
a composition comprising, in a medium suitable for dyeing,

(i) at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

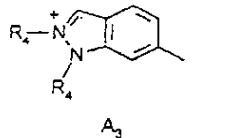
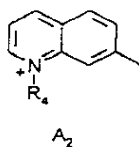
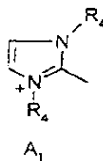
R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

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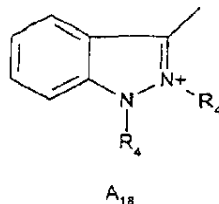
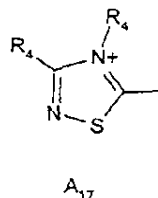
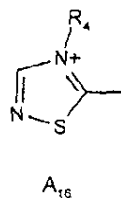
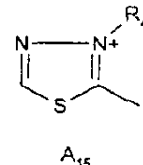
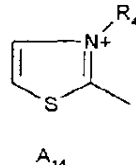
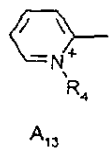
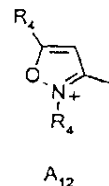
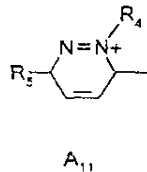
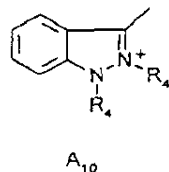
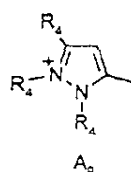
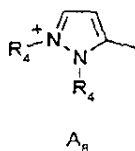
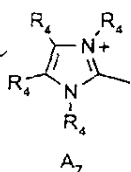
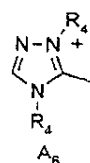
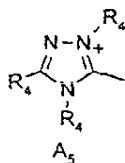
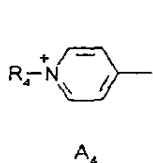
R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

X^- is an anion,

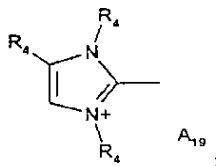
A is a group chosen from the following structures A_1 to A_{19} :



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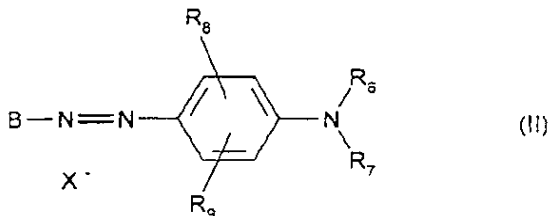
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

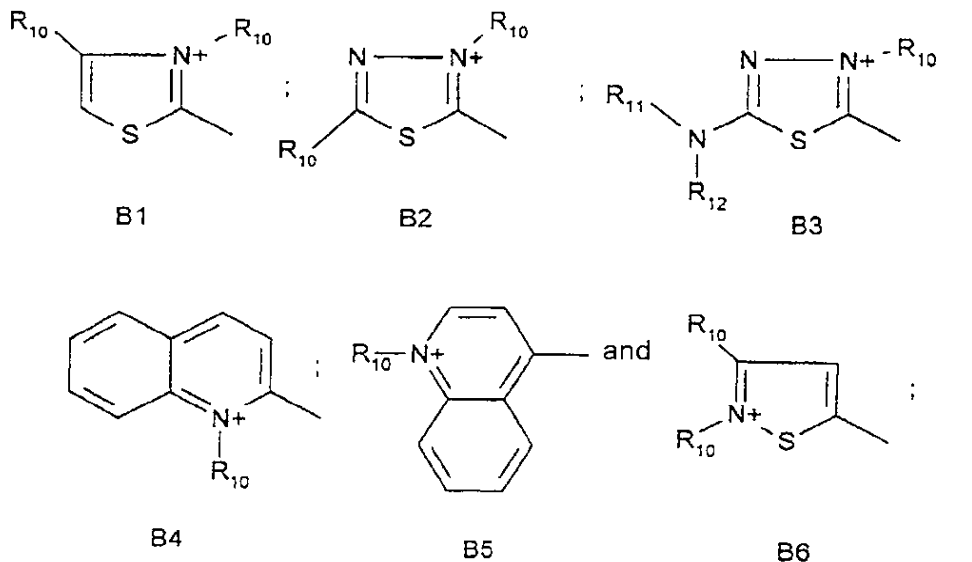
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_8 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

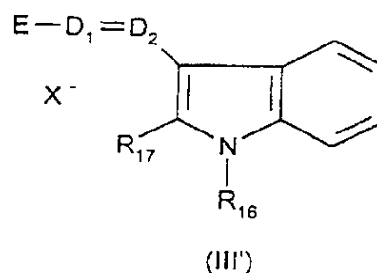
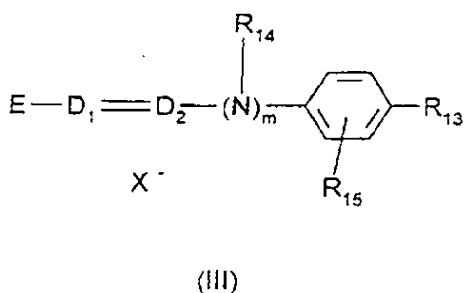
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

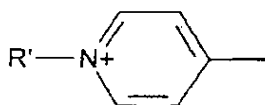
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

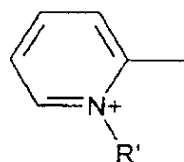
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

E is a group chosen from the following structures E1 to E8:

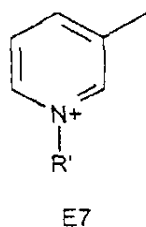
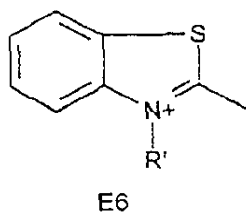
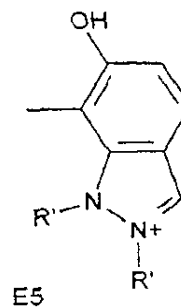
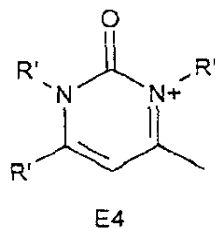
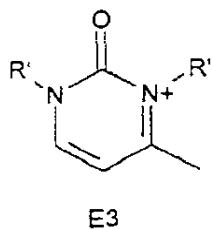


E1

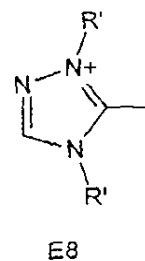


E2

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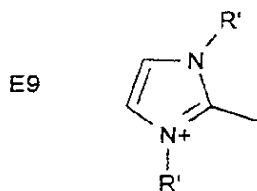


and



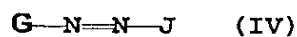
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



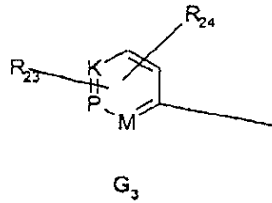
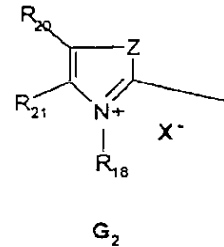
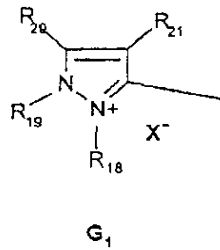
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R_{19} is a C_1 - C_4 alkyl radical or a phenyl radical;

R_{20} and R_{21} , which are identical or different, are chosen from a C_1 - C_4 alkyl radical and a phenyl radical, or form together in G_1 a benzene ring which is substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals, or form together in G_2 a benzene ring which is optionally substituted with at least one radical chosen from C_1 - C_4 alkyl, C_1 - C_4 alkoxy and NO_2 radicals;

R_{20} may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an $-NR_{19}$ group;

M is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^-)_r$;

K is a group chosen from $-CH$; $-CR$ wherein R is C_1 - C_4 alkyl; and $-NR_{22}(X^-)_r$;

P is a group chosen from $-CH$; $-CR$ wherein R denotes C_1 - C_4 alkyl; and $-NR_{22}(X^-)_r$, where r is zero or 1;

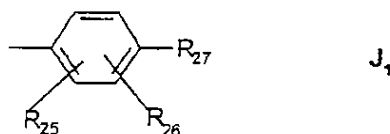
R_{22} is chosen from an O^- atom, a C_1 - C_4 alkoxy radical and a C_1 - C_4 alkyl radical;

R_{23} and R_{24} , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an $-NO_2$ radical;

X^- is an anion;

wherein J is chosen from:

-(a) a group having the following structure J_1 :

[illegible]

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

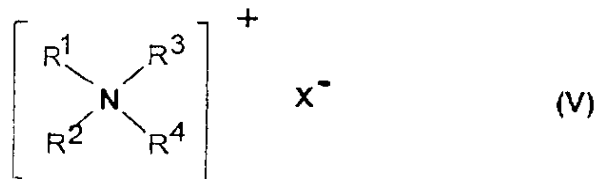
R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

(ii) at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):



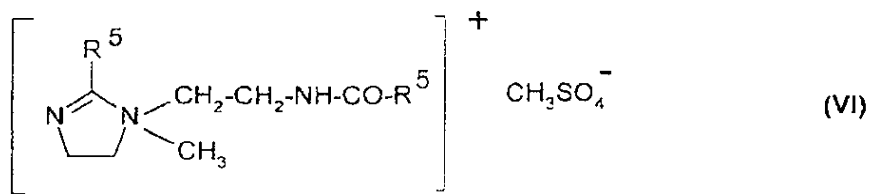
in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl,

aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

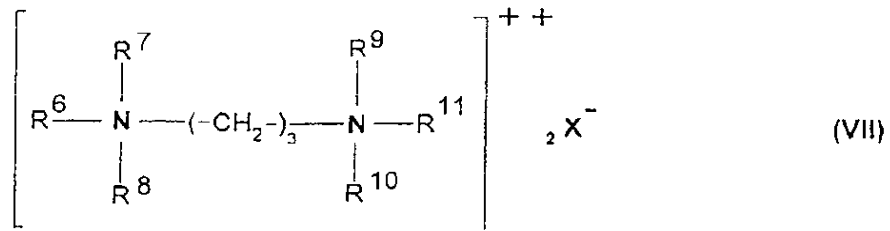
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

62. A method according to claim 61, further comprising rinsing said keratinous fibers after applying said composition thereon.

63. A method according to claim 62, further comprising washing said keratinous fibers with shampoo after said rinsing; and rinsing again said keratinous fibers after said washing.

64. A method according to claim 63, further comprising, after said washing and rinsing, drying said keratinous fibers.

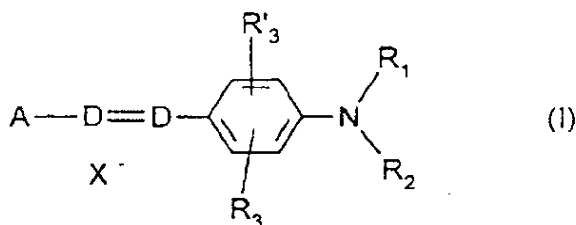
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66. A method according to claim 65, wherein said human keratinous fibers are hair.

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

67. A method for dyeing keratinous fibers, comprising
separately storing a first composition and a second composition;
mixing said first composition with said second composition before applying the
resultant mixture to said keratinous fibers; and
applying said mixture to the keratinous fibers,
wherein said first composition comprises, in a medium suitable for dyeing, at
least one oxidation base and
at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

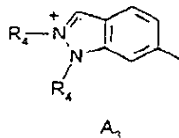
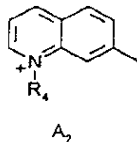
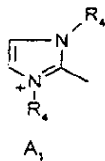
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R_1 and R_2 , which are identical or different, are chosen from a hydrogen atom; a C_1 - C_4 alkyl radical which is unsubstituted or substituted with a $-CN$, $-OH$ or $-NH_2$ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C_1 - C_4 alkyl radical; and a 4'-aminophenyl radical,

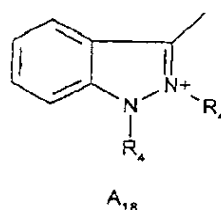
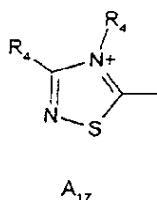
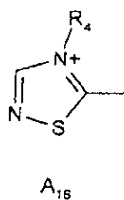
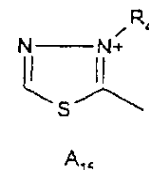
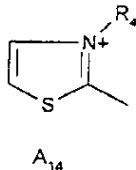
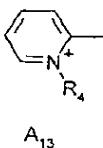
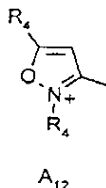
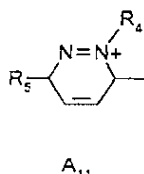
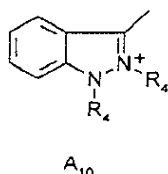
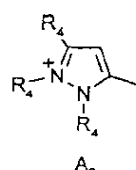
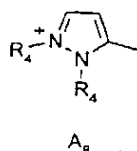
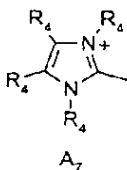
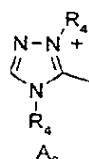
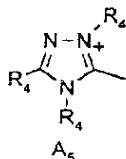
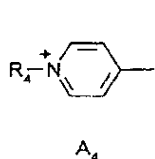
R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

X^- is an anion,

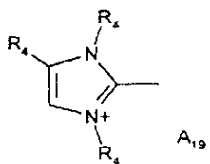
A is a group chosen from the following structures A_1 to A_{19} :



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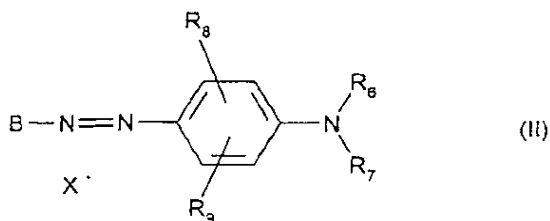
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

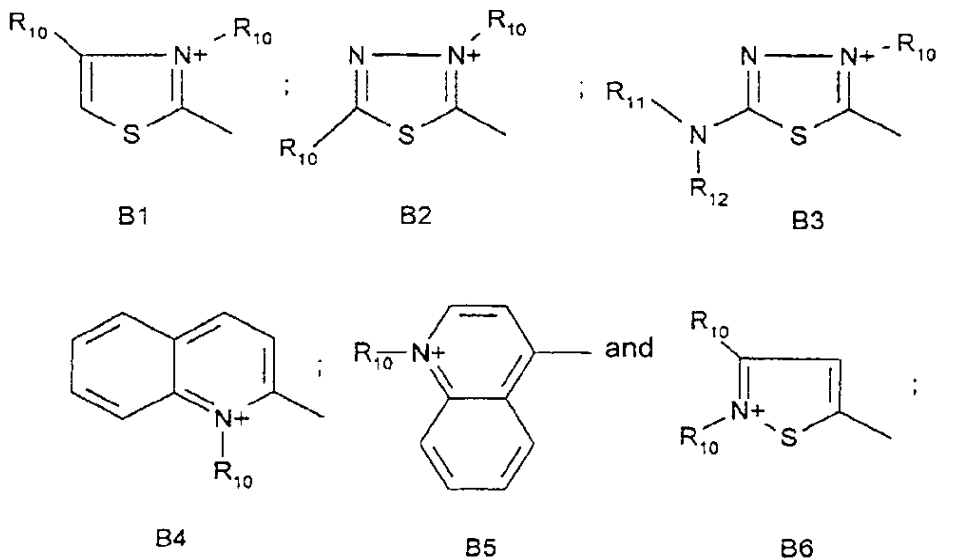
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

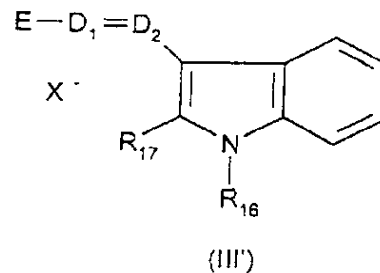
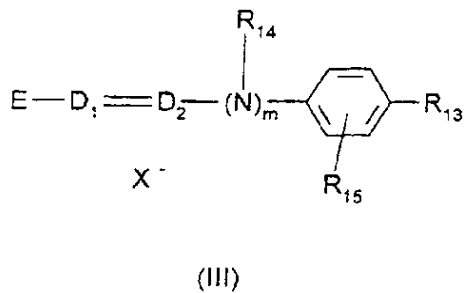
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C₁-C₄ alkyl radical,

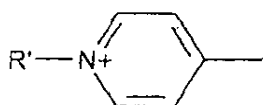
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

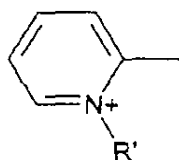
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

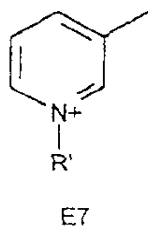
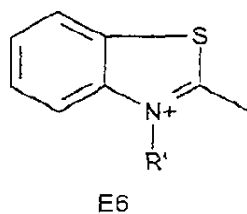
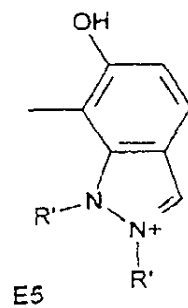
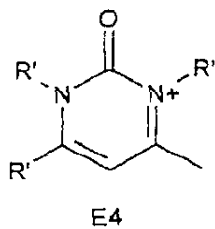
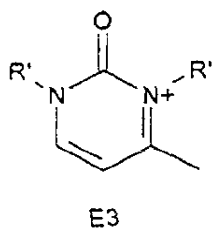
E is a group chosen from the following structures E1 to E8:



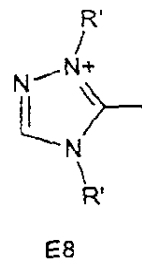
E1



E2

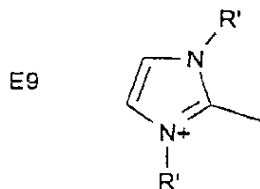


and



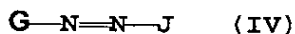
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol **G** is a group chosen from the following structures G_1 to G_3 :

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

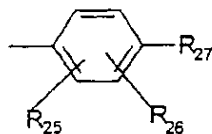
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



in which structure J_1 ,

R_{25} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a radical chosen from -OH, - NO_2 , - NHR_{28} , - $NR_{29}R_{30}$, and - $NHCO(C_1$ - C_4 alkyl), or forms with R_{26} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R_{26} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; and a C_1 - C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R_{27} is chosen from a hydrogen atom, an -OH radical, an - NHR_{28} radical, and an - $NR_{29}R_{30}$ radical;

R_{28} is chosen from a hydrogen atom, a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, and a phenyl radical;

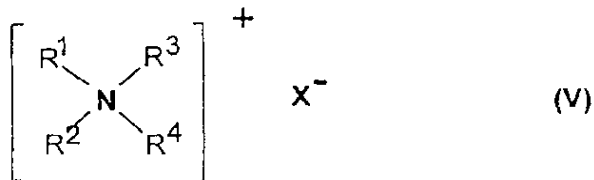
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

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-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

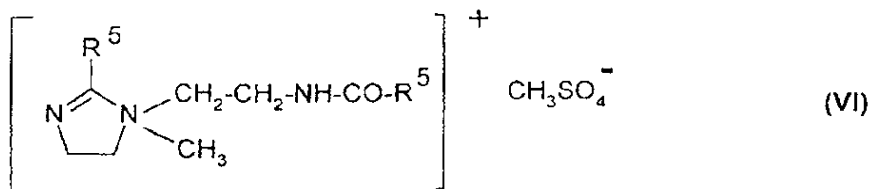


in which

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

(ii)₂ - imidazolium salts of the following formula (VI):

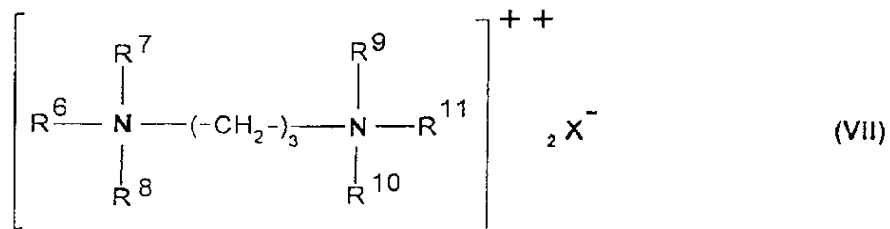


in which

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R^5 is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R^6 is an aliphatic radical comprising 16 to 30 carbon atoms,

R^7 , R^8 , R^9 , R^{10} and R^{11} are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X^- is an anion chosen from halides, acetates, phosphates and sulphates.

68. A method according to claim 67, wherein said keratinous fibers are human keratinous fibers.

Serial No.: Unassigned
Attorney Docket No.: 05725.0577-00

69. A method according to claim 68, wherein said human keratinous fibers are
hair.

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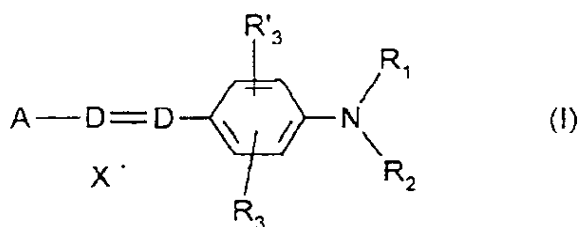
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70. A method for dyeing keratinous fibers, comprising
separately storing a first composition and a second composition;
mixing said first composition with said second composition before applying the
resultant mixture to said keratinous fibers; and
applying said mixture to the keratinous fibers,
wherein said first composition comprises, in a medium suitable for dyeing:
at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

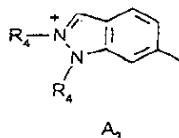
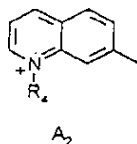
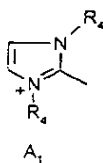
R₁ and R₂, which are identical or different, are chosen from a hydrogen
atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂

radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

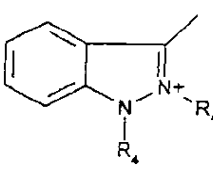
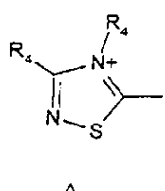
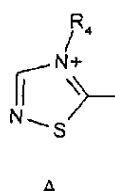
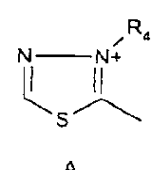
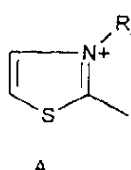
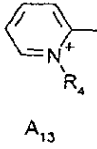
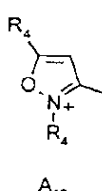
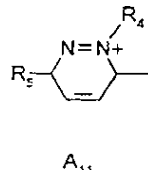
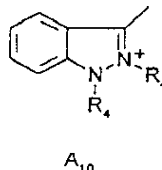
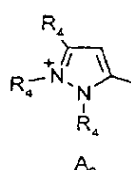
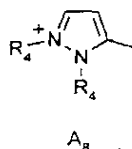
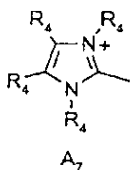
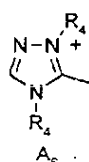
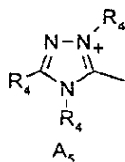
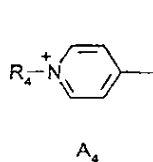
R₃ and R'₃, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an acetyloxy radical,

X⁻ is an anion,

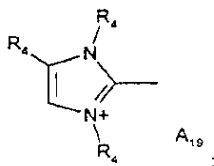
A is a group chosen from the following structures A₁ to A₁₉:



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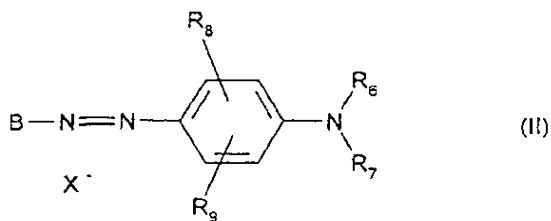
and



in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

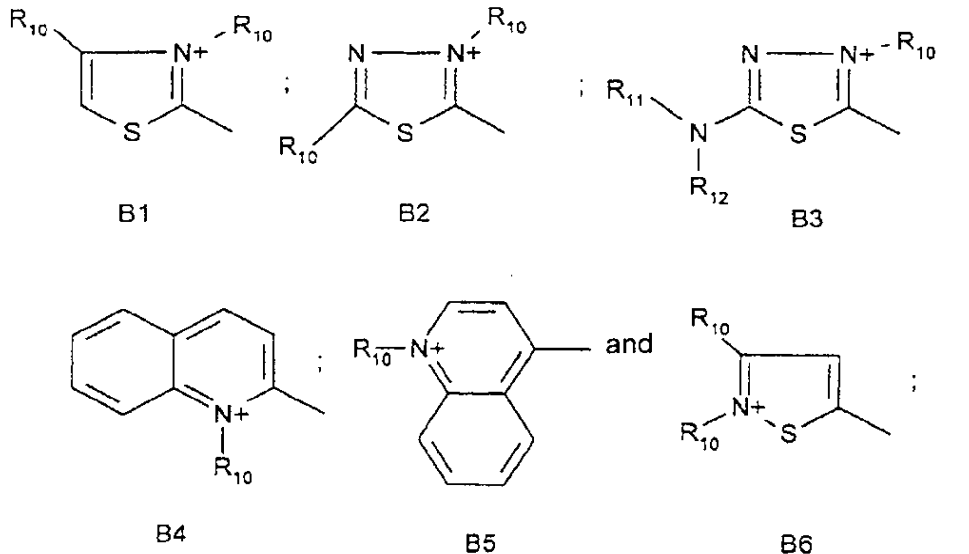
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

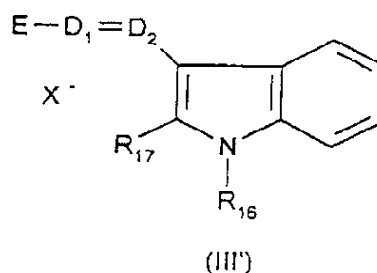
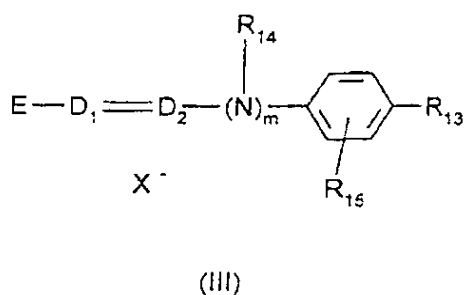
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:



in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

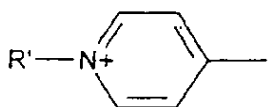
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

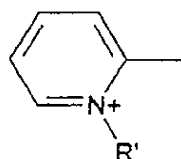
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

E is a group chosen from the following structures E1 to E8:

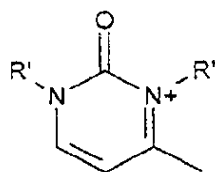


E1

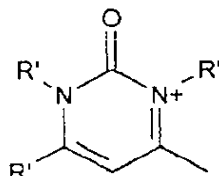


E2

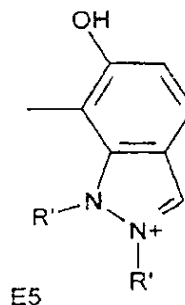
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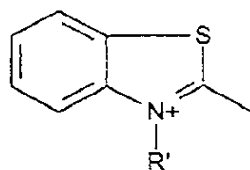
E3



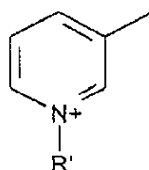
E4



E5

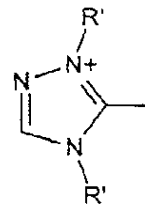


E6



E7

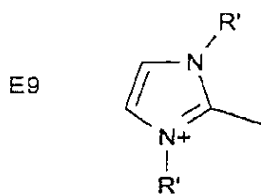
and



E8

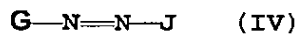
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



in which R' is a C_1 - C_4 alkyl radical, and

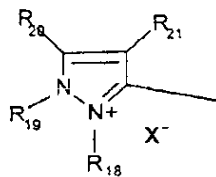
d) cationic direct dyes of formula (IV):



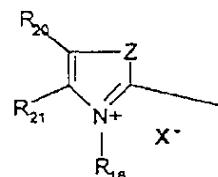
in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :

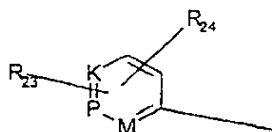
ag
 Con't



G₁



G₂



G₃

in which structures G₁ to G₃,

R₁₈ is chosen from a C₁-C₄ alkyl radical; a phenyl radical which is unsubstituted or substituted with a C₁-C₄ alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X_r);

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X_r);

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X_r), where r is zero or 1;

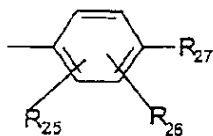
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



J₁

in which structure J₁,

R₂₅ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and a radical chosen from -OH, -NO₂, -NHR₂₈, -NR₂₉R₃₀, and -NHCO(C₁-C₄alkyl), or forms with R₂₆ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R₂₆ is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; and a C₁-C₄ alkoxy radical, or forms with R₂₇ or R₂₈ a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R₂₇ is chosen from a hydrogen atom, an -OH radical, an -NHR₂₈ radical, and an -NR₂₉R₃₀ radical;

R₂₈ is chosen from a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, and a phenyl radical;

R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

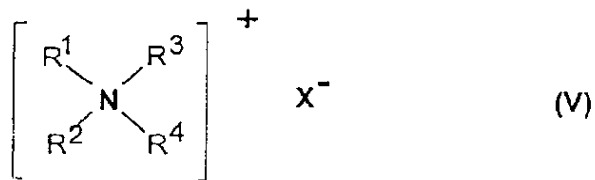
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-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

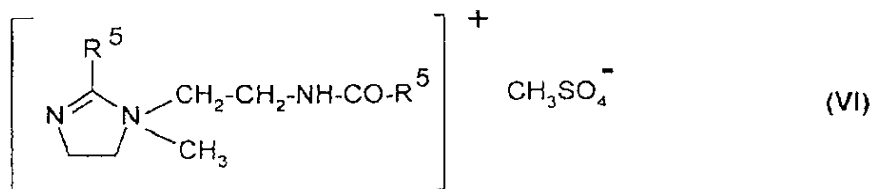


in which

the radicals R¹, R², R³, and R⁴, which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R¹, R², R³ and R⁴ is a radical comprising 8 to 30 carbon atoms;

X⁻ is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

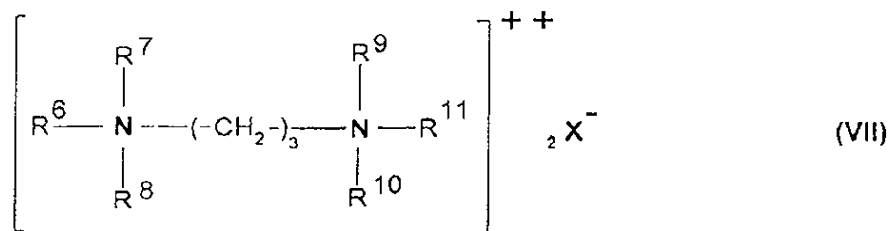
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

71. A method according to claim 70, wherein said keratinous fibers are human keratinous fibers.

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Attorney Docket No.: 05725.0577-00

72. A method according to claim 71, wherein said human keratinous fibers are hair.

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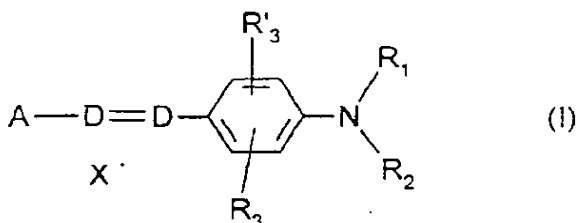
LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, DC 20005
202-406-4000

73. A multicompartment dyeing kit wherein a first compartment contains a first composition and a second compartment contains a second composition,

wherein said first composition comprises, in a medium suitable for dyeing, at least one oxidation base and

at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

D is a nitrogen atom or a -CH group,

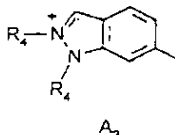
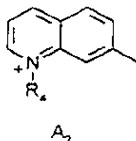
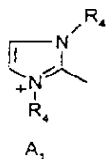
R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle

optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

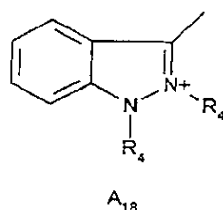
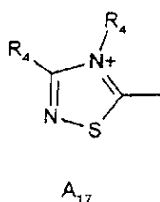
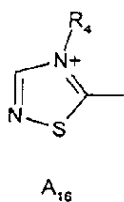
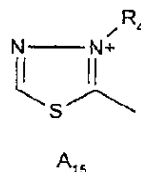
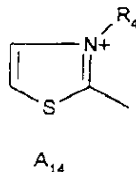
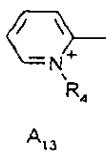
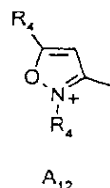
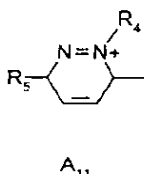
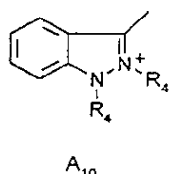
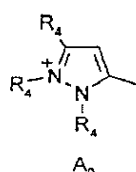
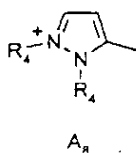
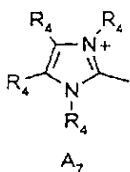
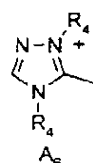
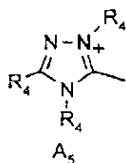
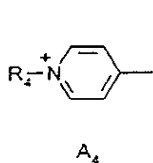
R₃ and R'₃, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an acetyloxy radical,

X⁻ is an anion,

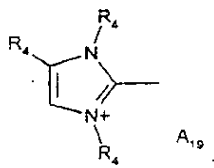
A is a group chosen from the following structures A₁ to A₁₉:



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and

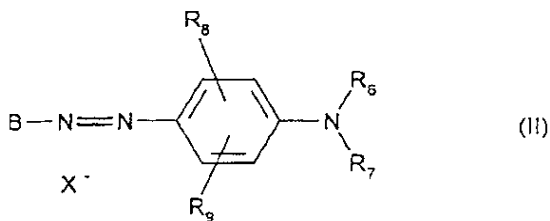


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in which R_4 is a C_1 - C_4 alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R_5 is a C_1 - C_4 alkoxy radical,

with the proviso that when D represents $-CH$, A is A_4 or A_{13} and R_3 is different from an alkoxy radical, then R_1 and R_2 are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

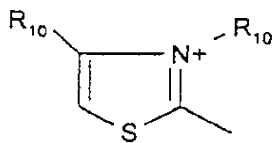
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a $-CN$ radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

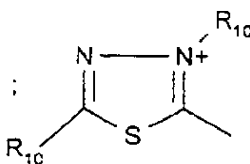
R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a $-CN$ radical,

X^- is an anion,

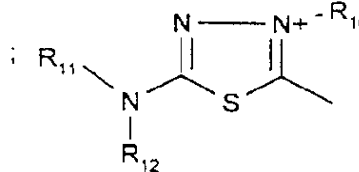
B represents a group chosen from the following structures B1 to B6:



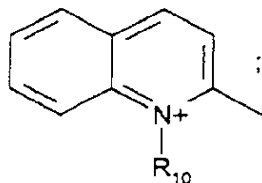
B1



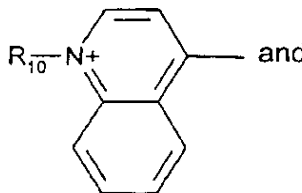
B2



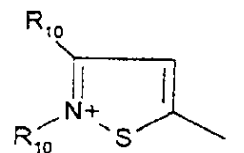
B3



B4



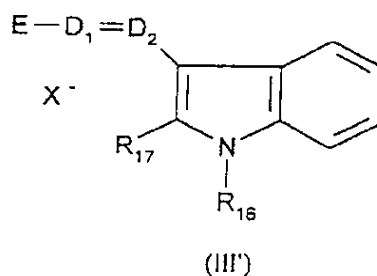
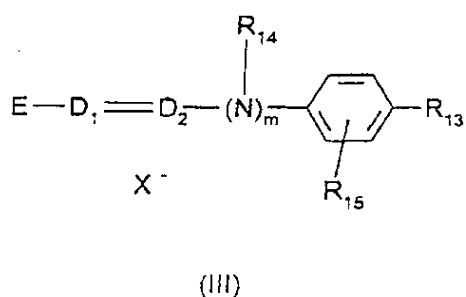
B5



B6

in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

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R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

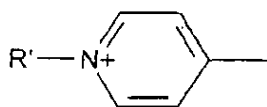
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

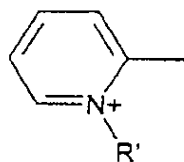
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

E is a group chosen from the following structures E1 to E8:

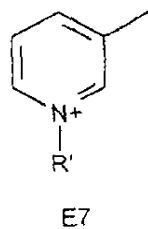
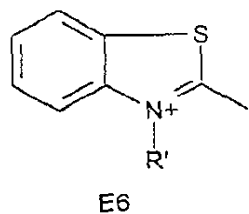
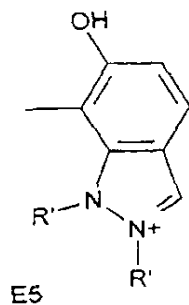
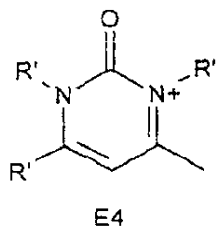
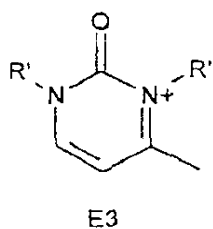


E1

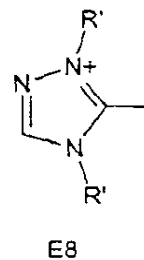


E2

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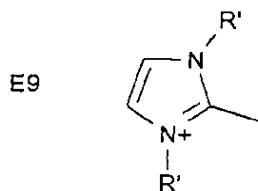


and



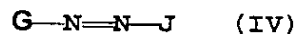
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



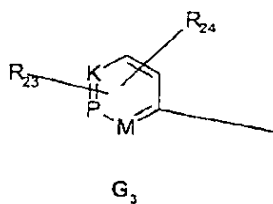
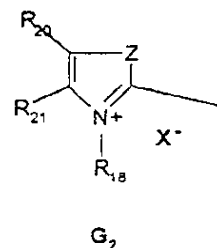
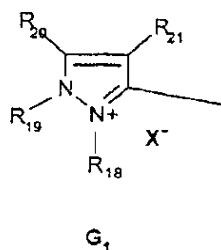
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

A9
Cont
R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻)_r;

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

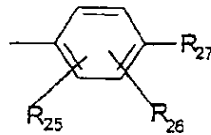
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



in which structure J_1 ,

R_{25} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a radical chosen from $-OH$, $-NO_2$, $-NHR_{28}$, $-NR_{29}R_{30}$, and $-NHCO(C_1-C_4\text{alkyl})$, or forms with R_{26} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

R_{26} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; and a C_1 - C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R_{27} is chosen from a hydrogen atom, an $-OH$ radical, an $-NHR_{28}$ radical, and an $-NR_{29}R_{30}$ radical;

R_{28} is chosen from a hydrogen atom, a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, and a phenyl radical;

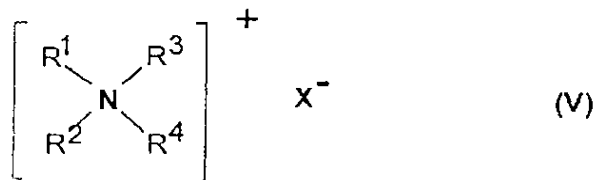
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

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-(b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

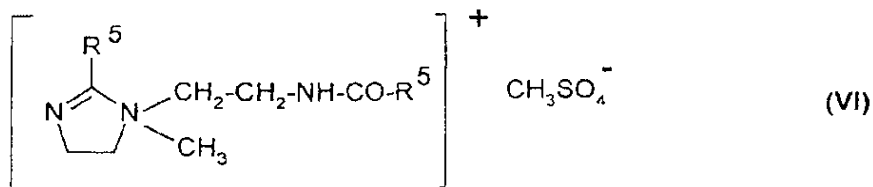


in which

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxy carbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

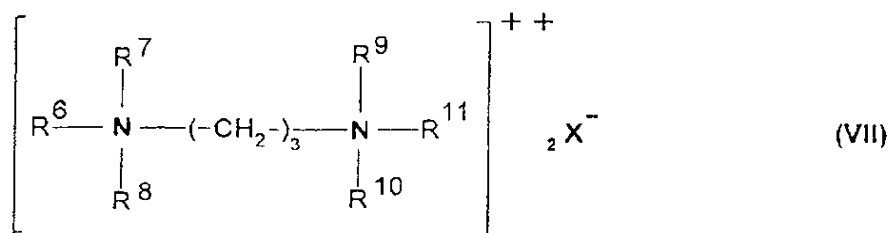
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁶ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):



in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

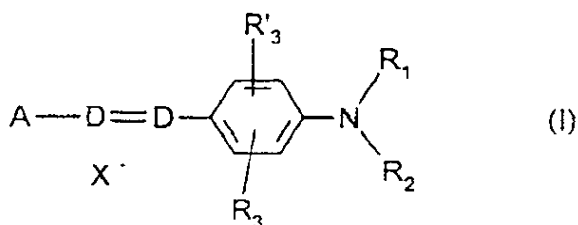
R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

74. A multicompartment dyeing kit wherein a first compartment contains a first composition and a second compartment contains a second composition,

wherein said first composition comprises, in a medium suitable for dyeing:

at least one cationic direct dye chosen from:

a) cationic direct dyes of formula (I):



in which:

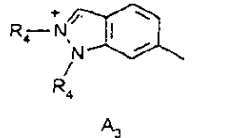
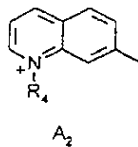
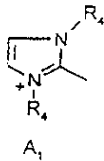
D is a nitrogen atom or a -CH group,

R₁ and R₂, which are identical or different, are chosen from a hydrogen atom; a C₁-C₄ alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH₂ radical or form with each other or a carbon atom of the benzene ring a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with at least one C₁-C₄ alkyl radical; and a 4'-aminophenyl radical,

R_3 and R'_3 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a cyano radical; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and an acetyloxy radical,

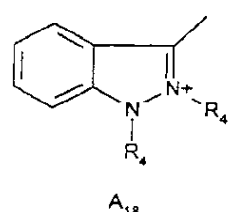
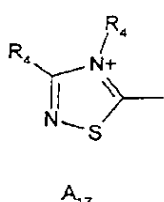
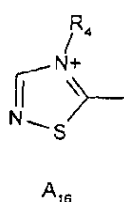
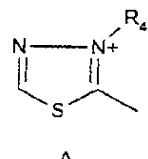
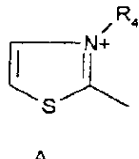
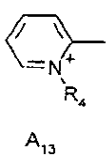
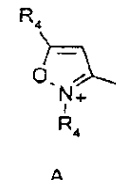
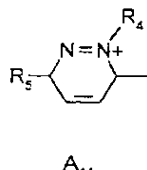
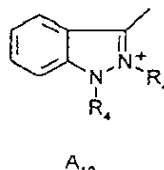
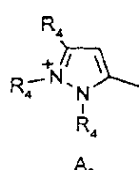
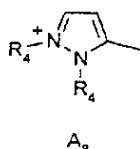
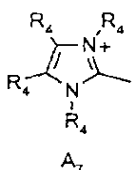
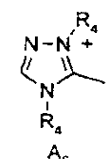
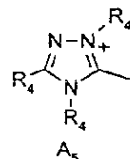
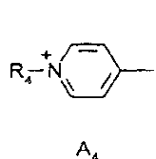
X^- is an anion,

A is a group chosen from the following structures A_1 to A_{19} :

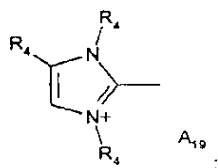


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and

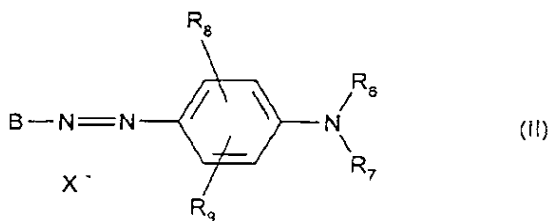


A9
Cont

in which R₄ is a C₁-C₄ alkyl radical which is unsubstituted or substituted with a hydroxyl radical and R₅ is a C₁-C₄ alkoxy radical,

with the proviso that when D represents -CH, A is A₄ or A₁₃ and R₃ is different from an alkoxy radical, then R₁ and R₂ are not simultaneously hydrogen atoms;

b) cationic direct dyes of formula (II):



in which:

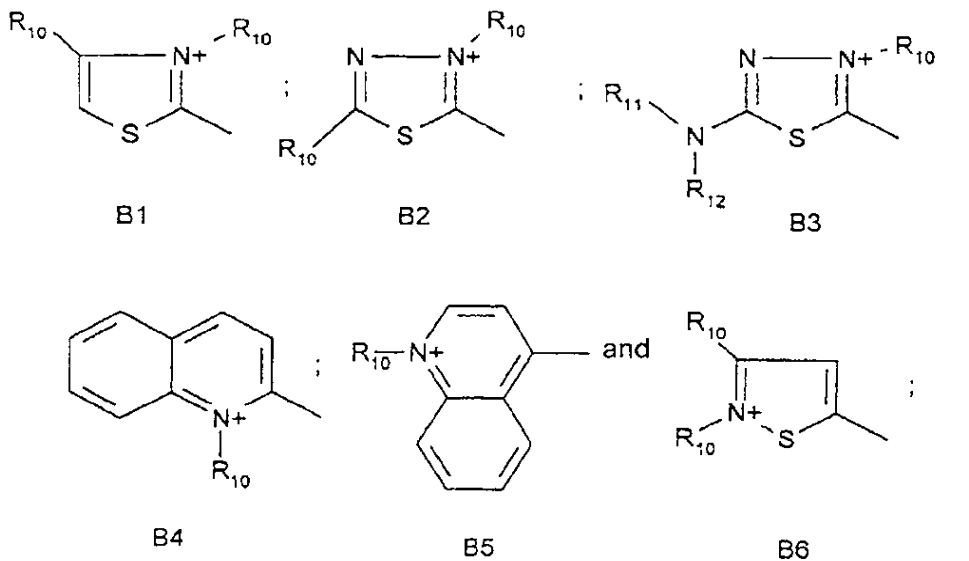
R_6 is a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 is chosen from a hydrogen atom; an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group; and a 4'-aminophenyl radical, or forms with R_6 a heterocycle optionally containing at least one of oxygen and nitrogen and which is unsubstituted or substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from bromine, chlorine, fluorine, and iodine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a -CN radical,

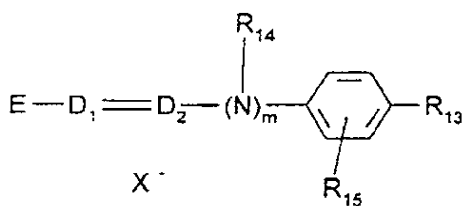
X^- is an anion,

B represents a group chosen from the following structures B1 to B6:

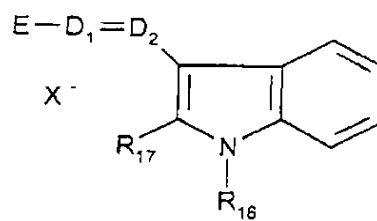


in which R_{10} is a C_1 - C_4 alkyl radical, R_{11} and R_{12} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical;

c) cationic direct dyes of the following formula (III) and formula (III'):



(III)



(III')

in which:

R_{13} is chosen from a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom chosen from bromine, chlorine, fluorine, and iodine; and an amino radical,

R_{14} is a hydrogen atom, a C_1 - C_4 alkyl radical or forms with a carbon atom of the benzene ring a heterocycle which is optionally oxygen-containing and is unsubstituted or substituted with at least one C_1 - C_4 alkyl group,

R_{15} is a hydrogen or halogen atom chosen from bromine, chlorine, fluorine, and iodine,

R_{16} and R_{17} , which are identical or different, are a hydrogen atom or a C_1 - C_4 alkyl radical,

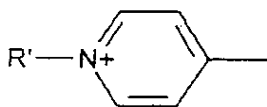
D_1 and D_2 , which are identical or different, are a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

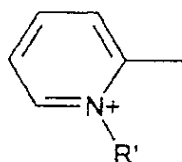
with the proviso that when R_{13} is an unsubstituted amino group, then D_1 and D_2 simultaneously are -CH groups and $m = 0$,

X^- is an anion,

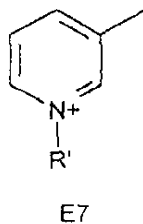
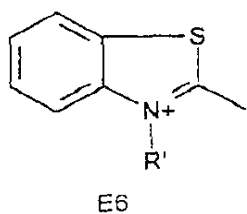
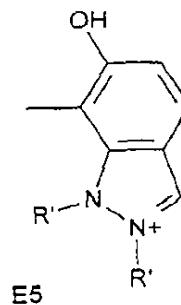
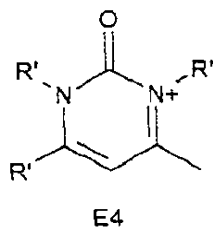
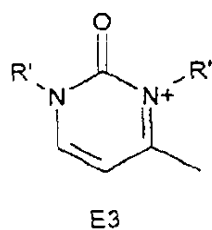
E is a group chosen from the following structures E1 to E8:



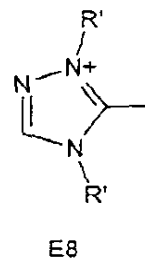
E1



E2

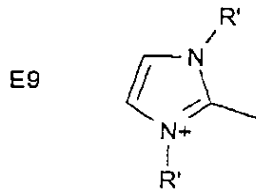


and



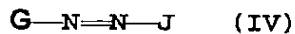
in which R' is a C₁-C₄ alkyl radical;

when $m = 0$ and D_1 is a nitrogen atom, then E may also be a group having the following structure E9:



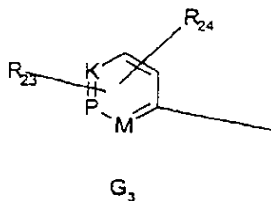
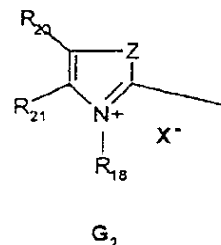
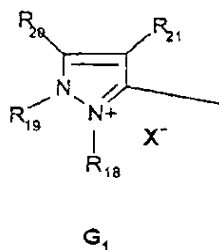
in which R' is a C_1 - C_4 alkyl radical, and

d) cationic direct dyes of formula (IV):



in which:

the symbol G is a group chosen from the following structures G_1 to G_3 :



in which structures G_1 to G_3 ,

R_{18} is chosen from a C_1 - C_4 alkyl radical; a phenyl radical which is unsubstituted or substituted with a C_1 - C_4 alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R₁₉ is a C₁-C₄ alkyl radical or a phenyl radical;

R₂₀ and R₂₁, which are identical or different, are chosen from a C₁-C₄ alkyl radical and a phenyl radical, or form together in G₁ a benzene ring which is substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals, or form together in G₂ a benzene ring which is optionally substituted with at least one radical chosen from C₁-C₄ alkyl, C₁-C₄ alkoxy and NO₂ radicals;

R₂₀ may also be a hydrogen atom;

Z is an oxygen or sulphur atom or an -NR₁₉ group;

M is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻);

K is a group chosen from -CH; -CR wherein R is C₁-C₄ alkyl; and -NR₂₂(X⁻);

P is a group chosen from -CH; -CR wherein R denotes C₁-C₄ alkyl; and -NR₂₂(X⁻)_r, where r is zero or 1;

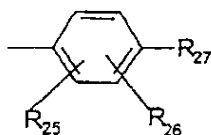
R₂₂ is chosen from an O⁻ atom, a C₁-C₄ alkoxy radical and a C₁-C₄ alkyl radical;

R₂₃ and R₂₄, which are identical or different, are chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C₁-C₄ alkyl radical; a C₁-C₄ alkoxy radical; and an -NO₂ radical;

X⁻ is an anion;

wherein J is chosen from:

-(a) a group having the following structure J₁:



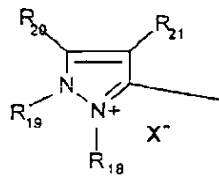
in which structure J_1 ,

R_{25} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; a C_1 - C_4 alkoxy radical; and a radical chosen from $-OH$, $-NO_2$, $-NHR_{28}$, $-NR_{29}R_{30}$, and $-NHCO(C_1$ - C_4 alkyl), or forms with R_{26} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen and sulphur;

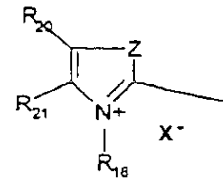
R_{26} is chosen from a hydrogen atom; a halogen atom chosen from chlorine, bromine, iodine and fluorine; a C_1 - C_4 alkyl radical; and a C_1 - C_4 alkoxy radical, or forms with R_{27} or R_{28} a 5- or 6-membered ring optionally containing at least one heteroatom chosen from nitrogen, oxygen or sulphur;

R_{27} is chosen from a hydrogen atom, an $-OH$ radical, an $-NHR_{28}$ radical, and an $-NR_{29}R_{30}$ radical;

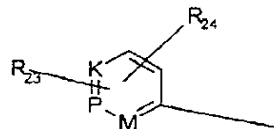
R_{28} is chosen from a hydrogen atom, a C_1 - C_4 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, and a phenyl radical;



G₁



G₂



G₃

in which structures G₁ to G₃,

R₁₈ is chosen from a C₁-C₄ alkyl radical; a phenyl radical which is unsubstituted or substituted with a C₁-C₄ alkyl radical or with a halogen atom chosen from chlorine, bromine, iodine and fluorine;

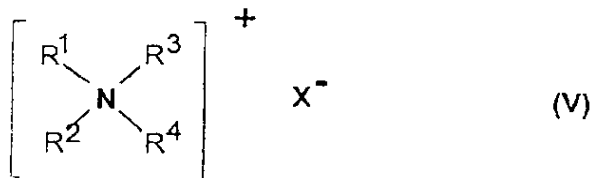
R₂₉ and R₃₀, which are identical or different, are chosen from a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, and a C₂-C₄ polyhydroxyalkyl radical; and

- (b) a 5- or 6- membered nitrogen-containing heterocycle group which optionally contains additional heteroatoms, carbonyl-containing groups, or a mixture of additional heteroatoms and carbonyl-containing groups and which is unsubstituted or substituted with at least one radical chosen from C₁-C₄ alkyl, amino and phenyl radicals, and

wherein said second composition comprises, in a medium suitable for dyeing, at least one oxidizing agent; and

wherein either said first composition or said second composition further comprises at least one quaternary ammonium salt chosen from:

(ii)₁ - quaternary ammonium salts of the following formula (V):

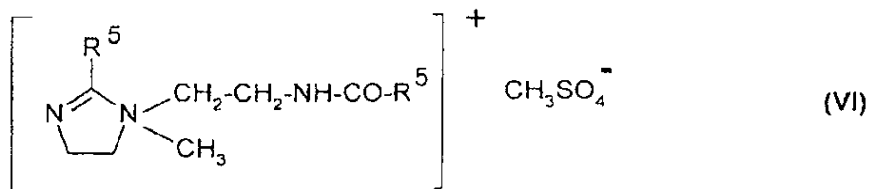


in which

the radicals R^1 , R^2 , R^3 , and R^4 , which are identical or different, are chosen from a saturated or unsaturated, linear or branched, aliphatic hydrocarbon radical comprising 1 to 30 carbon atoms; and a radical chosen from alkoxy, alkoxycarbonylalkyl, polyoxyalkylene, alkylamido, alkylamidoalkyl, hydroxyalkyl, aromatic, aryl and alkylaryl radicals comprising 12 to 30 carbon atoms, wherein at least one radical among R^1 , R^2 , R^3 and R^4 is a radical comprising 8 to 30 carbon atoms;

X^- is an anion chosen from halides, phosphates, acetates, lactates and alkyl sulphates;

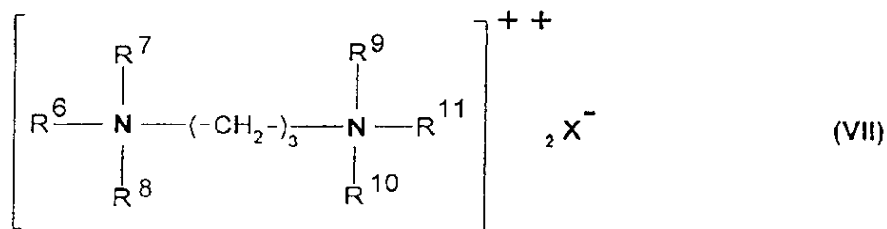
(ii)₂ - imidazolium salts of the following formula (VI):



in which

R⁵ is chosen from alkenyl radicals and alkyl radicals, said alkenyl radicals and alkyl radicals comprising 13 to 31 carbon atoms and being derived from tallow fatty acids;

(ii)₃ - quaternary diammonium salts of the following formula (VII):

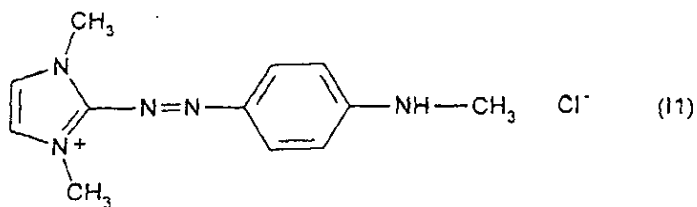


in which

R⁶ is an aliphatic radical comprising 16 to 30 carbon atoms,

R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are chosen from hydrogen or an alkyl radical comprising 1 to 4 carbon atoms, and X⁻ is an anion chosen from halides, acetates, phosphates and sulphates.

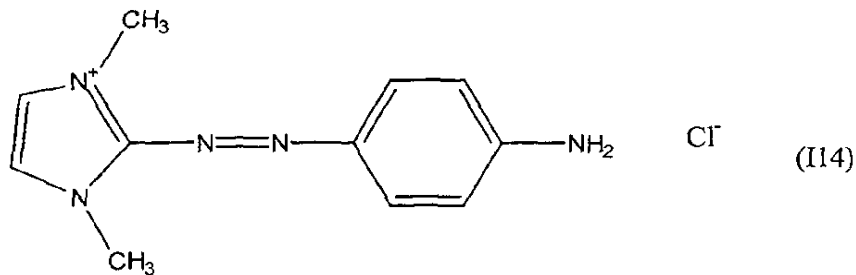
75. A composition for dyeing keratinous fibers, comprising a cationic direct dye
of structure (11):



and oleocetyldimethylhydroxyethylammonium chloride.

76. A composition for dyeing keratinous fibers, comprising:

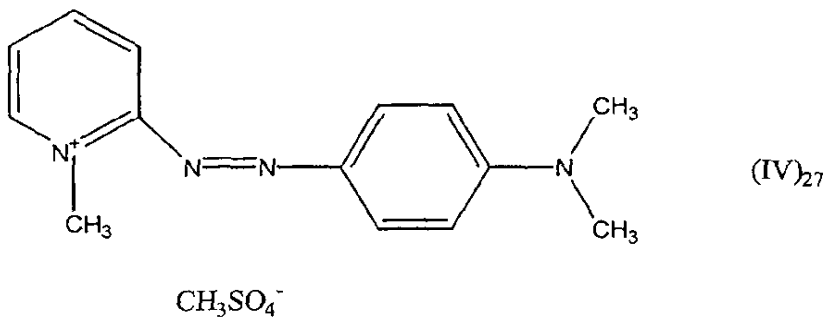
a cationic direct dye of structure (I14):



and behenyltrimethylammonium chloride.

77. A composition for dyeing keratinous fibers, comprising:

a cationic direct dye of structure (IV)₂₇:



and cetyltrimethylammonium chloride.--

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